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WORLD SILVER SURVEY 2011

THE SILVER INSTITUTE

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GFMS

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Coeur d'Alene Mines Corporation

Coeur d'Alene Mines Corporation is the largest U.S.-based primary silver producer and a growing gold producer. The Company has three new, large precious metals mines generating significantly higher production, sales and cash flow in continued strong metals markets. In 2011, Coeur will realize the first full year of production and cash flow from all three of its new, 100%-owned mines: San Bartolomé in Bolivia; the Palmarejo silver/gold mine in Mexico, and the Kensington Gold Mine in Alaska. In addition, the Company is expecting new production from its long-time flagship Rochester mine in Nevada. The Company also owns non-operating interest a low-cost mine in Australia, and conducts ongoing exploration activities near its operations in Argentina, Mexico and Alaska. Coeur common shares are traded on the New York Stock Exchange (symbol CDE) and the Toronto Stock Exchange (CDM).

Fresnillo Plc

Fresnillo Plc is the world's largest primary silver producer and Mexico's second largest gold producer, listed on the London Stock Exchange under the symbol FRES. Fresnillo has four producing mines, all of them in Mexico – Fresnillo, Cienega, Herradura and Soledad-Dipolos; two development projects – Saucito and Noche Buena; and four exploration prospects – San Juan, San Julian, Orysivo and Juanicipio as well as a number of other long term exploration prospects and, in total, has mining concessions covering approximately 1.91 million hectares in Mexico. Fresnillo has a strong and long tradition of mining, a proven track record of mining development and reserves replacement, and production costs in the lowest quartile of the cost curve for both silver and gold. Fresnillo's goal is to maintain the Group's position as the world's largest primary silver company, producing 65 million ounces of silver and over 400,000 ounces of gold by 2018.

Industrias Peñoles, S.A.B. de C.V.

Peñoles is a mining group with integrated operations in smelting and refining non-ferrous metals, and producing 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 and lead. The Company was founded in 1887 and it is part of "Grupo BAL", a privately held diversified group of independent Mexican companies. Peñoles' shares have traded on the Mexican Stock Exchange since 1968 under the ticker PE&OLES.

Peñoles highlights:

- Began operations in 1887 as a mining company.
- Has integrated operations in the areas of exploration, mining, metallurgy and chemicals.
- Listed on the Mexican Stock Exchange since 1968; the stock is included in the IPC index.
- One of the largest net exporters in Mexico's private sector.

Pan American Silver Corp.

Pan American Silver Corp. was founded in 1994 with the mission to be the world's largest low-cost primary silver mining company and to achieve this by constantly increasing its low-cost silver production and silver reserves. Today, Pan American owns and operates seven silver mines in Mexico, Peru, Argentina and Bolivia. In 2010, the Company's 15th consecutive year of production growth, Pan American produced a record 24.3 million ounces of silver. In 2011, the Company expects to produce 23 to 24 million ounces of silver and 76,000 to 78,000 ounces of gold.

Pan American has one of the industry's most exciting growth profiles. The Company operates the La Preciosa silver project, located in Durango, Mexico. Pan American is currently conducting additional technical work to complete a preliminary assessment for La Preciosa in mid-2011. Pan American also owns the Navidad silver project, one of the largest undeveloped silver deposits in the world, located in Chubut, Argentina. The Company recently released Navidad's preliminary assessment and is currently carrying out technical work to complete an Environmental Impact Assessment and ultimately a full Feasibility Report.

Silver Wheaton Corp.

Established in 2004, Silver Wheaton has quickly positioned itself as the largest silver streaming company in the world. Silver Wheaton has entered into a number of agreements where, in exchange for an upfront payment, it has the right to purchase, at a low fixed cost, all or a portion of the silver production from strategically selected high-quality mines. The company currently has silver streaming agreements covering 16 operating mines and three development stage projects located in politically stable regions around the world.

Silver Wheaton's industry-leading growth profile is driven by its portfolio of world-class assets, including silver streams on Goldcorp's Peñasquito mine in Mexico and Barrick's Pascua-Lama project straddling the border of Chile and Argentina. With low fixed cash costs and unhedged silver sales, the company's unique business model creates significant shareholder value by providing considerable leverage to increases in the silver price while reducing many of the risks faced by traditional mining companies. Silver Wheaton's shares are traded under the symbol SLW on the Toronto Stock Exchange and the New York Stock Exchange.

World Silver Survey 2011

Produced for The Silver Institute
by GFMS Limited

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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 the page overleaf.

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This is the seventeenth 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.
Implied Net Investment = the residual from combining all other GFMS data on silver supply/demand as shown in Table 1. As such, it captures the net physical impact of all transactions not covered by the other supply/demand variables.

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.

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1. Summary and Outlook

Silver's astonishing gains in 2010 (the price increasing by 78% between January and December) and continued strength in the first quarter of this year have principally stemmed from two key developments on the demand-side of the equation. The first and most important is a tremendous rise in investor interest, which can be seen from our comprehensive World Investment measure that last year leapt to 279.3 Moz (8,689 t), roughly equivalent to a net inflow of $5.6 bn into the precious metal. The second is the surge in fabrication demand, concentrated in its dominant and, in the short term price insensitive, industrial segment; the latter in 2010 nearly recovered all the recession-induced losses recorded in the previous year and has seen further significant advances in 2011-to date. The strength of these two areas of demand is clearly illustrated in their ability to brush aside a quite marked increase in supply.

As regards the outlook for prices, GFMS are positive, but cautiously so. We believe that the economic backdrop for investment will in general remain supportive as monetary policy is unlikely to be tightened that much in 2011 and inflation and sovereign debt concerns will most probably grow further. This will encourage investment demand for silver and, importantly, gold on whose coat-tails silver so often rides. Additional support should also flow through from ongoing solid gains in industrial demand.

We are, however, somewhat concerned by the extent to which the white metal has lately powered ahead of gold. We are skeptical, for instance, that there is a 'new paradigm' at work that justifies a move ever lower in the gold:silver ratio. Moreover, we are conscious of the fact that a fair proportion of the recent investment in silver is from more speculative money that could exit the market rapidly if conditions were to change. In that regard, we would be wary of any signs that industrial demand is faltering as this could be a trigger for a major short term correction in silver prices that would probably bring silver's path more into line with that of gold.

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

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Supply										
Mine Production	606.2	593.9	596.6	613.0	637.3	641.7	665.4	681.9	718.3	735.9
Net Government Sales	63.0	59.2	88.7	61.9	65.9	78.5	42.5	28.9	15.5	44.8
Old Silver Scrap	189.0	196.3	194.0	195.2	198.6	203.3	199.0	193.7	188.4	215.0
Producer Hedging	18.9	-	-	9.6	27.6	-	-	-	-	61.1
Implied Net Disinvestment	-	18.9	1.6	-	-	-	-	-	-	-
Total Supply	**877.1**	**868.3**	**881.0**	**879.7**	**929.5**	**923.5**	**907.0**	**904.5**	**922.2**	**1,056.8**
Demand										
Fabrication										
Industrial Applications	349.7	355.3	368.4	387.4	431.8	454.2	491.1	492.7	403.8	487.4
Photography	213.1	204.3	192.9	178.8	160.3	142.2	117.6	101.3	79.3	72.7
Jewelry	174.3	168.9	179.2	174.8	173.8	166.3	163.5	158.3	158.9	167.0
Silverware	106.1	83.5	83.9	67.2	67.6	61.0	58.5	57.1	58.2	50.3
Coins & Medals	30.5	31.6	35.7	42.4	40.0	39.8	39.7	65.4	79.0	101.3
Total Fabrication	873.6	843.5	860.1	850.6	873.6	863.5	870.3	874.7	779.2	878.8
Producer De-Hedging	-	24.8	20.9	-	-	6.8	24.2	11.6	22.3	-
Implied Net Investment	3.6	-	-	29.1	55.9	53.2	12.5	18.2	120.7	178.0
Total Demand	**877.1**	**868.3**	**881.0**	**879.7**	**929.5**	**923.5**	**907.0**	**904.5**	**922.2**	**1,056.8**
Silver Price (Average London US$/oz)	4.370	4.599	4.879	6.658	7.312	11.549	13.384	14.989	14.674	20.193

Table 1b - Supply & Demand with Bar Investment

(million ounces)	2008	2009	2010
Supply			
Mine Production	681.9	718.3	735.9
Net Government Sales	28.9	15.5	44.8
Old Silver Scrap	193.7	188.4	215.0
Producer Hedging	-	-	61.1
Physical Bar Disinvestment	-	15.4	-
Implied Net Disinvestment	96.7	-	-
Total Supply	**1,001.2**	**937.6**	**1,056.8**
Demand			
Total Fabrication	874.7	779.2	878.8
Producer De-Hedging	11.6	22.3	-
Physical Bar Investment	114.9	-	55.6
Implied Net Investment	-	136.2	122.4
Total Demand	**1,001.2**	**937.6**	**1,056.8**

The table above recasts the main supply and demand table with physical bar investment as a separate series. This has been done to provide greater detail on what has grown to become a material part of the balance. This is our second year of presenting the data in this way but this time we show global figures for investment in bars, whereas last year we only gave the Indian number. This broadening was carried out due to the growth in this field in China and Germany and sustained investment in the United States. Table 1b also highlights developments in other areas, such as the heavy sell off in the OTC market and on Comex in the wake of Lehman's collapse in 2008. The key features for last year's implied figure is its slight drop, caused by the fall in the 'investor' long on Comex, the smaller rise in ETF holdings and a relatively restrained full year contribution from the OTC market on a net basis.

Supply in 2010

• Mine production increased by 2.5% last year, aided by new projects in Mexico and Argentina.

• Higher prices encouraged a swing to significant net producer hedging, of 61.1 Moz (1,901 t).

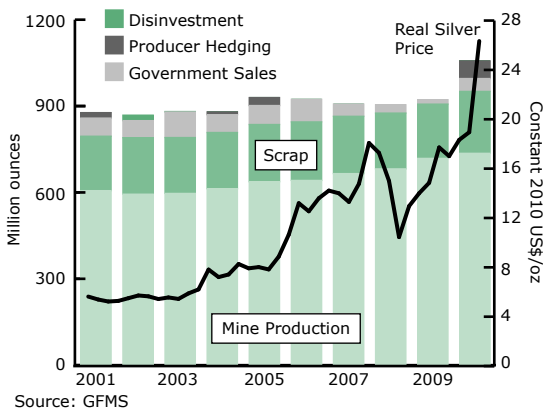
• Net government sales jumped by 188% to 44.8 Moz (1,393 t) last year.

• Scrap supply rose by 14%, as gains in industrial and jewelry recycling exceeded the ongoing decline in photographic recovery.

Silver **mine production** expanded by 2.5%, to reach a new record level, of 735.9 Moz (22,889 t) in 2010. Growth was driven by increases from the primary silver and lead/zinc sectors, in both cases a result of significant new production capacity. Most importantly, the start of Peñasquito's sulfide (zinc) operation and the ramp-up of Palmarejo (primary silver) in Mexico together accounted for almost all of the country's 13% increase last year, promoting Mexico to the position of world's largest producer once again. Similarly, a full year of commercial production at Pirquitas (primary silver) in 2010 was influential in Argentina's 20% production growth. Elsewhere, substantial increases were recorded for China and Australia, where the improvement was linked to higher output at established operations, including Cannington, the world's leading silver mine last year.

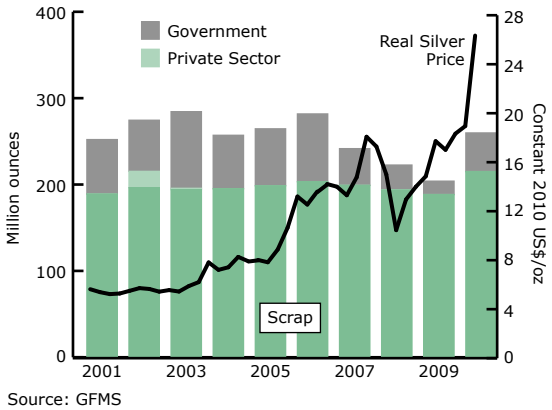
Moderating these gains were heavy losses in Peru and Russia, of 7.4 Moz (231 t) and 5.4 Moz (167 t) respectively. A number of unfavorable mine planning issues at several of the country's largest mines impacted Peruvian output, while Russian volumes were hit by lower silver recoveries from the base metals sector.

World Silver Supply



Source: GFMS

Mobilization of Above-Ground Stocks



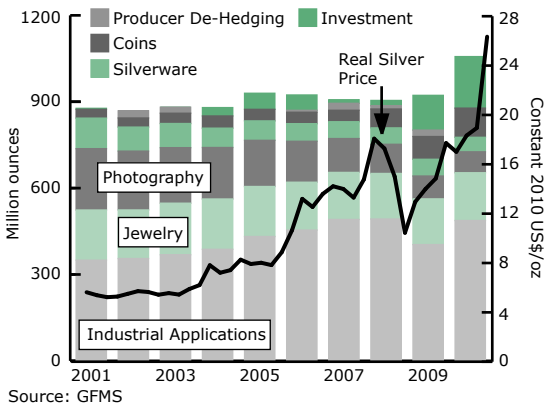
Source: GFMS

A dramatic swing to **producer hedging** generated 61.1 Moz (1,901 t) of supply, ending a four year run of de-hedging. Renewed enthusiasm to hedge silver was essentially limited to a group of by-product, rather than primary, silver miners. Several small new hedges countered the impact of contracts maturing, but central to the large swing to net hedging were the actions of Minera Frisco, Barrick Gold and Minera Volcan. Collectively these companies added over 60 Moz (1,866 t) of contracts in 2010 (delta-adjusted), taking advantage of higher prices to hedge non-core revenues over multi-year periods.

After three consecutive years of decline, **net government sales** rebounded strongly to 44.8 Moz (1,393 t) in 2010, up by 29.3 Moz (910 t) year-on-year. The notable increase was almost exclusively driven by a major rise in disposals from Russia.

Scrap supply saw an increase of 14% in 2010, setting a new record high of 215.0 Moz (6,687 t). The ongoing decline in silver recovered from photographic applications was countered last year by a sharp rise in scrap receipts from the industrial sector. Key to this were tighter environmental monitoring and elevated silver prices, which generated healthy gains in the United States, China and Europe. There was also a bounce in recycling from both jewelry and silverware, stemming in the main from the 38% rise in the price (basis annual average dollar levels). Marked rises from these sectors were registered in most markets but it was in the price sensitive developing world (in particular India and Thailand) where the greatest gains were witnessed. Much of the increase came from consumers taking profits or disposing of dated pieces, although there was also some inventory melt by the trade, mainly on the silverware side.

World Silver Demand



Source: GFMS

Demand in 2010

• Total fabrication last year grew by 12.8% to a 10-year high of 878.8 Moz (27,333 t), chiefly through the recovery in industrial demand.

• Industrial offtake rebounded by 20.7% to 487.4 Moz (15,160 t), a level just shy of 2008's volume.

• The slim losses in medical-related demand helped limit the drop in photography last year to 8.3%.

• Jewelry fabrication in 2010 grew by 5.1% to a five year high of 167.0 Moz (5,194 t).

• Structural trends and high prices left silverware demand down some 14% at 50.3 Moz (1,566 t).

• Implied net investment rose by 47% to 178.0 Moz (5,537 t), with the bulk of demand concentrated in ETFs and physical bullion bars.

Total fabrication grew by an impressive 12.8% to 878.8 Moz (27,333 t) in 2010, chiefly through the 20.7% rebound in industrial demand. Both jewelry and coin offtake also rose, respectively by 5.1% and 28.3%. The only areas to record falls were the structurally weak sectors of silverware and photography. Indeed, their historic losses are the key reason why total fabrication achieved only a 10-year and not an all time high last year.

Industrial demand in 2010 enjoyed a healthy recovery, rising by 20.7% to 487.4 Moz (15,160 t). This was chiefly due to the industrialized world's return to growth, the restocking of supply pipelines and ongoing buoyant emerging market GDP gains. Despite this strength, volumes did not quite re-attain 2008's pre-crisis levels, chiefly on account of the depth of the early 2009 trough from which offtake had to climb. The timing of that nadir meant 2010's year-on-year gains in industrial demand were strongest early on but, even with a fading of the restocking effect, offtake looks to have grown quarter-on-quarter during 2010, as underlying demand continued to improve, and gains are thought to have continued so far this year. A key reason that all this has been possible is that, to-date, substitution of silver for other materials has been limited, although there was notable thrifting of its use in several sectors.

Most areas of end-use enjoyed gains, with those for photo voltaics, ethylene oxide catalysts and the automotive industries worthy of mention. The only main area that disappointed was construction in the industrialized world. At a country level, Japan saw the greatest rise as its demand returned to 'normal', while sizable volume

increases were also seen for China and the United States and then Germany and South Korea. The only country of note to see losses was India, as a result of price damage to its quasi-industrial segments.

Silver's use in **photography** in 2010 realized its smallest loss in nine years, in absolute terms, falling by 6.6 Moz (204 t) or 8.3% to 72.7 Moz (2,261 t). Last year's more modest fall was mainly due to only a slight drop in the output of traditional X-rays. Faced with significant budgetary constraints, it was not uncommon for medical centers to defer the conversion to digital systems, thereby prolonging their use of silver halide products.

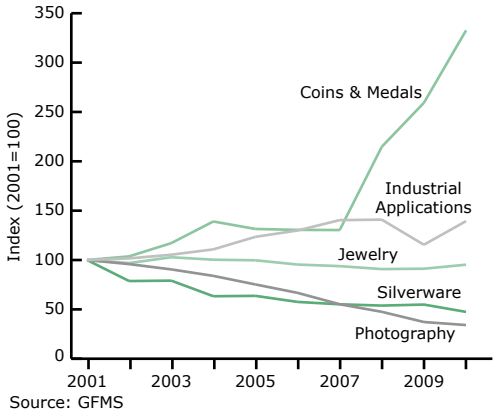
Jewelry fabrication rose by 5.1% last year to a five-year high of 167.0 Moz (5,194 t). This represented its first rise of substance since 2003. One key reason for growth was strong GDP gains in many emerging markets (in particular China but also generally in East Asia) and silver jewelry's success in attracting rising consumer expenditure there. A second driver was the industrialized world's emergence from recession against a background of high gold prices as this encouraged a shift to sterling silver. These two factors lifted western consumption by over 5%, with the benefits of this flowing through to both local and Asian manufacturers. Growth was constrained, however, by gold substitution mainly boosting the value of silver consumption, while silver's own high price and downgrading to costume jewelry also trimmed demand. Price damage was most acute in India, the only major country to see losses in 2010, as buoyant first quarter gains swung to a very weak year-end.

After its slight rise in 2009, **silverware** offtake resumed its downtrend last year, falling a hefty 14% to 50.3 Moz (1,566 t), equal to just 47% of 2001's volumes. Much of the drop was down to India where high prices contributed to a 25% slump, as evidenced by its very weak fourth quarter. The price and structural trends explained why most other countries saw losses, although Russia and China stand out for having enjoyed notable gains.

Implied net investment jumped by a hefty 47% last year to 178.0 Moz (5,537 t), a new all time high in GFMS' 21-year data series. Investor interest began to build early on through silver's industrial links as sentiment towards the world economic outlook improved. Silver's precious credentials then brought forth greater investment inflows due to the spill-over from gains in the gold market stemming chiefly from the European sovereign debt crisis. After a late spring/summer lull, investment demand for silver exploded from September onwards, on the back of further quantitative easing in the United States and Japan, a weak dollar, the return of acute concerns over European sovereign debt and increasing anxiety over potential inflation. Not all was mere gold shadowing in this period as the gold:silver ratio contracted sharply. Key to this is silver having yet to match historic highs and its less liquid market, which attracted growing speculative interest. In addition, investor sentiment was boosted by silver's more robust fundamentals, in particular its firm industrial base. Much of the investment in these months took place in ETFs, the OTC market and in physical bars, but less on the Comex.

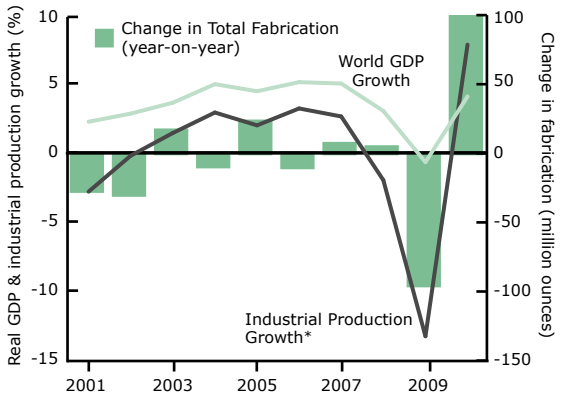
Coins & medals demand was also strong last year, with offtake rising by 28% to a record 101.3 Moz (3,151 t). In aggregate, **World Investment** (implied net investment plus coins & medals) totaled 279.3 Moz (8,689 t), a volume equating to roughly $5.6 bn in value terms.

World Silver Fabrication Indices



Source: GFMS

Fabrication Demand & World Economic Indicators



*Advanced economies only; Source: IMF, GFMS

2. Silver Prices

- ***Thanks to a rally to a 30-year high of $30.70, the annual average silver price jumped by 38% in 2010 to $20.19, a level only ever beaten in 1980.***

- ***Booming investment was the prime cause of the price increase, although a strong rebound in industrial fabrication was also significant.***

The annual average silver price in 2010 leapt by 38% to $20.19, a nominal level only ever surpassed by 1980's $20.98. Much of this was due to the dramatic rally from September onwards that took the price to a 30-year high on December 30th of $30.70; prior to that, prices had been less interesting, rarely trading outside of $18-$19 for the whole of April-August. Early 2010 also had a bearish tone, with the price slipping to a low for the year of $15.14 in early February. The scale of the recovery from that trough shows in the intra-year rise standing at a dramatic 78%. We could also note that this buoyancy is very much still alive, with the price having shot up to over $36 in early March this year. Such levels suggest the annual average could easily reach an all time high this year, although we are still some way off the record for the daily high of $49.45 (basis the London fix) set in 1980.

Silver's price performance also stands in good light in comparison to gold, which managed a rise in its annual average price of 'only' 26%. Much of this was arguably due to silver's less liquid investment market. This became truly apparent from September as the gold:silver ratio, having spent much of the year in the high 60s and showing little direction, narrowed relentlessly to almost 45 by year-end, a move which took it from well above to somewhat below the 1968-2010 average of 53.0. Silver also benefitted strongly from the 21% rebound in industrial fabrication. This is certainly implied if we look at the performance of the more purely industrial metal, copper, which saw a yet larger rise of 46% in its annual average price. However, the rally in the copper price was a more progressive affair, with its rise in the September-December period far from the spectacular gains that silver was then enjoying. This twin-pronged demand growth was arguably essential for silver as it had to face supply growth, often substantial, in all segments.

US$ Silver Price

	1980	1990	2000	2010
Annual Average	20.984	4.832	4.953	20.193
Maximum	49.450	5.356	5.448	30.700
Minimum	10.890	3.950	4.570	15.140
Range:Average	183.8%	29.1%	17.7%	77.1%

Source: GFMS

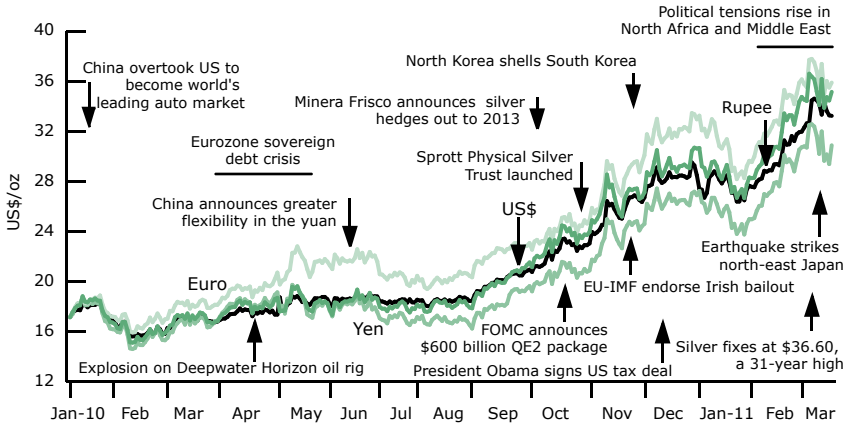
The Silver Price in Other Currencies in 2010

	Euro/kg	Rupee/kg	Yen/10g	Yuan/kg
Annual Average	489.1	32,007	569.7	4,393
Maximum	745.1	47,205	814.6	6,517
Minimum	355.3	24,965	434.4	3,323
Range:Average	79.7%	69.5%	66.7%	72.7%

Source: GFMS

London Silver Market: Spot Price

US$/oz; other currencies reindexed to January 4th 2010



Source: GFMS

Silver's price strength also stands up to scrutiny if reviewed on an inflation-adjusted basis; the annual average in constant 2010 money was only last bettered in 1983 and only three other years, 1979-81, saw higher annual averages. Nonetheless, last year's $20.19 remained well under half of 1980's real average of $55.53, while last year's daily high of $30.70 was a far cry from 1980's real daily high of over $130.

Another measure of silver's true buoyancy is the extent to which its price rise was a mere US dollar play and, on this count, we find little to qualify its price gains. For most countries, the price rise tended to be a little more modest, with rupee prices for example up 34%, although in euro terms the rise was even greater at 44%. On the consumer side, it was only in yen terms that the price increase was notably smaller at 29%. On the producer side, silver in Australian dollar terms saw a still notable but far less heady 18% annual average price rise.

Despite the heady end-year gains, the fairly straight line nature of the rally and the rangebound phase from April to August meant that price volatility fell to a relatively ordinary 32%, and thus notably lower than 2009's 38% and sharply down on 2008's 53%. Lease rates spent almost the entire year rangebound at slight nominal negative levels, although the 12-month rate showed more direction as it trended broadly downwards. This, however, all abruptly changed this year in mid-January and again in mid-February when all lease rates spiked sharply higher, a development that pushed the market into backwardation. The sudden nature of these changes suggest heavy producer hedging, rather than say industrial borrowing, may have been the main cause.

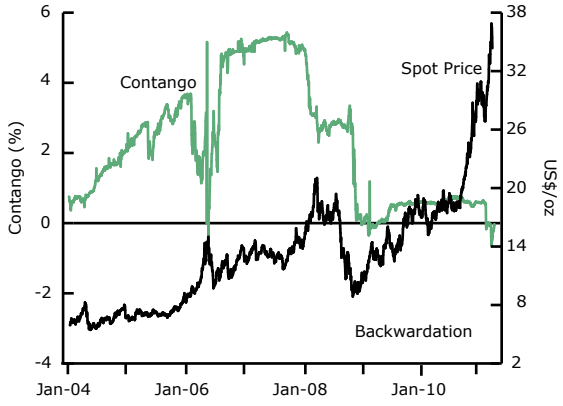
Market Analysis

As noted earlier, 2010 was not uniformly bullish, as the silver price fell by $3.70 from its January high to a low for the year on February 8th of $15.14. This was partly the result of dollar strength, itself triggered by the Eurozone sovereign debt crisis beginning to build, and also stale long liquidation as the long term rally in place since late 2008 seemed to have run out of steam. Also of significance was the announcement of further monetary tightening measures by the Chinese authorities (such as banks being told to restrain lending), which led to a base metals sell-off that in turn undermined silver. An indicator of an industrial focus lies in the gold:silver ratio rising from the low 60s to over 70 in just two weeks.

From then, however, silver prices and those of many other metals began to firm, aided by an improvement in confidence regarding the world economy. News of specific benefit to silver included a report that semiconductor sales in February had grown by over 50%. Copper saw particular strength at this time as, in March, an earthquake struck Chile, the world's largest producer, and its resultant rally had some spill over into silver.

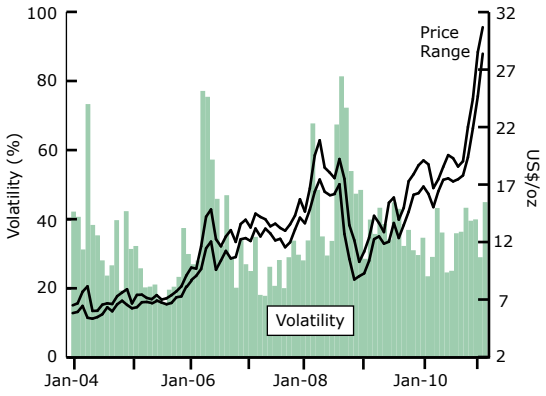
This all meant that, by the end of the first quarter, silver had recovered to $17.50. That still left it down on its January highs, partly as gold prices were struggling in the face of a resurgent dollar and renewed economic confidence. However, the escalation of sovereign debt problems in Europe in April put a fire under the yellow metal and this no doubt assisted silver as it rallied through to $19.59 by May 12th, a level last surpassed in March 2008.

London Spot Price and 3-month Contango



Source: GFMS

Daily Silver Price Volatility



Source: GFMS

From that point, silver prices slipped back somewhat and became largely rangebound through to late August, in that period rarely trading for long outside of a $18-$19 band. It was of note that the performance of silver and gold prices diverged quite notably over those months. The yellow metal, for instance, continued to rally through to late June but silver failed to follow, largely as talk of recession in Europe and further curbs on Chinese bank lending did much to undermine sentiment towards the industrial metals. However, as real world industrial demand for silver began to gather pace, the white metal managed to escape gold's correction in July, itself largely the result of heavy profit taking as the worst was felt to be over as regards the sovereign debt crisis.

Silver's rangebound restraints were then blown away in September as the price began to rally dramatically and relentlessly to over $24 by mid-October, thereby finally overtaking the March 2008 peaks and so establishing levels last exceeded in 1980. There was then a brief pause in which silver shed almost $1.50 in a week or so from its October high but the rally soon returned with a vengeance, pushing through to a fresh 30-year high on November 9th of $28.55.

Integral to these gains was monetary policy. In August for instance, the US authorities suggested that low real interest rates would remain in force for some time, while in November the United States saw a further round of quantitative easing. Such measures also put the dollar under pressure as it sank against the euro from under $1.27 in late August to over $1.40 by mid-October. The dollar:euro rate then began to trade sideways but this scarcely proved bearish for the precious metals as the

Volatility (US$ Price)

	2007	2008	2009	2010
Annual	26%	53%	38%	32%
	10.Q1	**10.Q2**	**10.Q3**	**10.Q4**
Quarterly	29%	36%	24%	39%

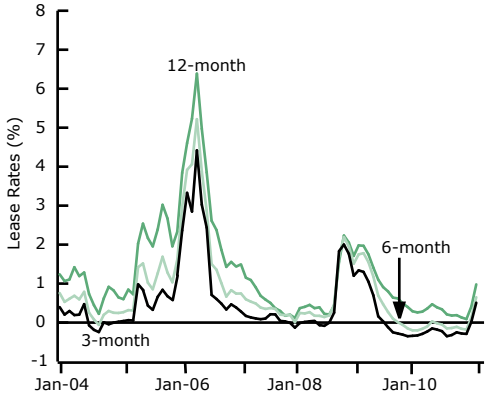
Source: GFMS

end to dollar weakness was largely down to the escalation of Eurozone sovereign debt problems. The period also saw nagging worries about potential, significant inflation.

However, the above is arguably insufficient as an explanation of silver's gains as all apply to gold, perhaps more so with its clearer safe haven angle, yet the gold: silver ratio contracted progressively and by the November high had fallen to below 50. A key element to this was investors, particularly those with a more speculative approach, actively trading the ratio or specifically targeting silver to take expected advantage of higher geared returns in a less liquid market. However, also of importance was silver's surging industrial fabrication, with good news emerging in this phase regarding Indian and Chinese industrial output prospects. Furthermore, silver did not have to cope with an acceleration in scrap supply anything like as marked as seen in the gold market.

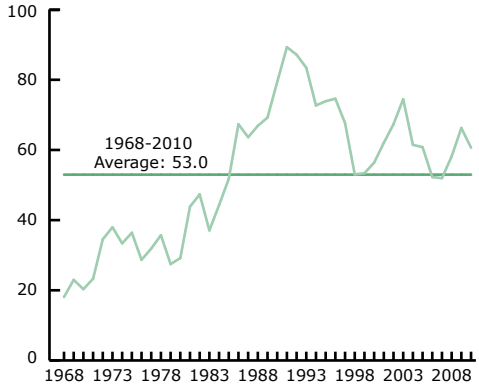
The closing few weeks of 2010 saw a final flourish as the price ultimately rallied to a fresh high of $30.70 on December 30th. Many of the same drivers applied to silver's strength at the time, for example December's accommodative US tax package, fresh quantitative easing in Japan and the Irish-centered sovereign debt crisis in Europe reaching a climax. However, this final phase

Silver Leasing Rates



Source: GFMS

The Gold / Silver Price Ratio



Source: GFMS

differed in that prices were much more volatile. Two important drivers of this change in nature were gains occurring in the face of dollar strength and decent levels of profit taking. The latter came from those investors seeking a tidy exit at a time when prices were beginning to look toppy and to lock in solid year-end results.

One of the main areas for the above profit taking was the over-the-counter (OTC) market as part of the positions built up during a phase of aggressive acquisitions in the immediately prior months was unwound. This is a key reason why the implicit scale of net buying in the OTC market for 2010 as a whole might seem light to some. The exchange traded funds (ETFs) behaved differently, in that, as in previous years, they rarely saw much net selling but the period of heaviest gains did coincide; over 70% of the full year's rise in holdings occurred in September and October. It is worth noting that last year saw the launch of several new ETFs in silver and, while there was no doubt an element of cannibalization from existing ETFs, product differentiation and additional promotion on balance yielded net gains.

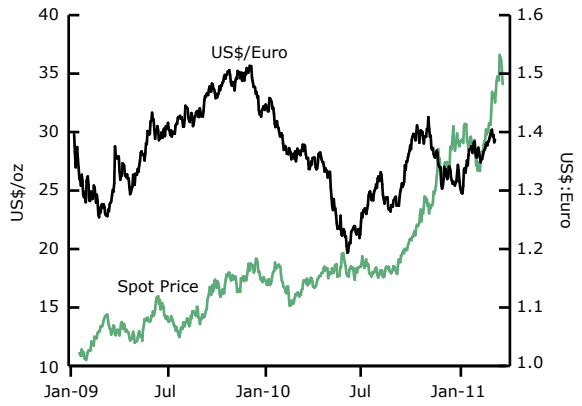
Another strong support for the market was investment in bar form. Over half of this took place in India, mainly in September-November due to bullish price expectations. Germany and the United States also saw sizable net buying as investors sought a higher geared version of gold, despite a typically less favorable tax situation (US volumes were, however, sharply down year-on-year). The only main arena that provided little support was the Comex, with the net 'investor' position showing little clear direction over the year and ending up down in comparison to 2009 basis the snap-shot of year-end positions.

While we ascribe to the view that the course of precious metal prices generally last year was dominated by investment, the fundamentals were highly significant in the case of silver. Of greatest importance was industrial fabrication, which bounced back from recession, adding over 83 Moz (2,600 t) of largely price inelastic demand. The nature of this offtake was critical as industrial demand was often strongest in the closing months, in contrast to gold and its withering jewelry-biased offtake.

Silver's own jewelry fabrication was also supportive as it grew by 5.1% to a five-year high. The percentage gain was actually greater for gold jewelry but that was overwhelmingly down to an early window of accelerated Indian buying, while silver's gains were more persistent, widespread and less price driven. Silver was also fortunate in that, outside of India, the rise in its price generated only fairly restrained volumes of extra jewelry scrap, in contrast to the flood emanating from gold.

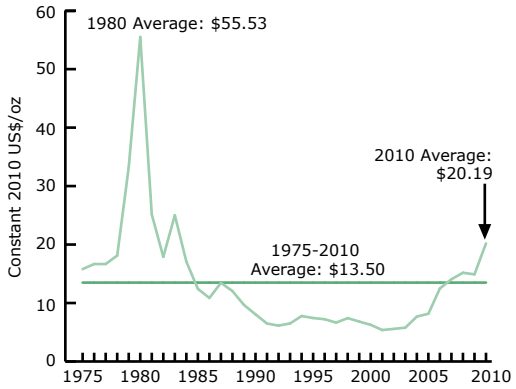
Nonetheless, total scrap rose significantly as collectors sought to exploit higher prices in such fields as industrial or photographic scrap, although the reaction of such sub-sectors to changes in the price was at least often sluggish. Other areas of supply also boomed and the rise in the silver price clearly featured in opportunistic government sales and the swing to net producer hedging. The rise in mine production could be seen as implicitly bearish, if only marginally given its slight contribution of an extra 17.6 Moz (548 t). However, the rise was far smaller than earlier expected, thus adding a bullish twist to actual results. Mine output's percentage gains for 2011 should be larger but, to date, this has been easily outweighed by investment gains, even in India.

The Silver Price and the US Dollar



Source: Thomson Reuters

Real Silver Prices



Source: GFMS

Silver and Other Commodity Prices

GFMS believe that the examination of correlation coefficients is highly useful, not only as an indication of underlying themes that may influence the market but also to confirm economic theory with empirical evidence. It must be noted, however, that the existence of either a positive or inverse correlation between two assets is not sufficient in itself to establish direct causality.

Silver's "hybrid" precious and industrial nature leads to links with gold, copper and the CRB Index (the latter as a proxy for commodities as a whole) that appear powerful, but which can vary greatly. In the first half of 2010, silver's daily trading relationship with copper was closer than that with gold, although both relationships were strong. As an industrial metal silver benefited from industrial inventory replenishment; but as a precious metal, silver sentiment was also colored by growing fears of sovereign debt risk in Europe, which pressured copper, but buoyed silver and gold. Mid-year market confusion stemmed from conflicting economic signals on both sides of the Atlantic, loosening relationships between asset classes. Late 2010 saw fresh interest in commodities that tightened silver's relationship with copper, while silver and gold forged renewed ties on increasing fears of medium-term inflationary pressures.

In early 2011 silver's relationship with gold has been reinforced, while its link with industrial metals has weakened as economic and, particularly, political risk have become key drivers of market sentiment.

The significance of economic sentiment on market performance is illustrated by the declining relationship between silver and the S&P 500 during 2010. Silver's relatively close alliance with the equities early in the year underpins how industrial expectations were helping to inform sentiment. The subsequent fragmentation of this relationship has reflected silver's reversion towards gold as a risk hedge. Equities and silver were both rising in the latter part of 2010, but the day-to-day markets were more concerned at this stage with inflationary fears than industrial performance and it is this that reduced the correlation between silver and equities in favor of gold.

Silver's correlation with the dollar is similar to silver's relationship with the CRB index. Both sets of correlations stood below 30% in the final quarter of 2010. The implication here is that the dollar is most significant to silver when the commodities complex as a whole is on the move and driven by dollar shifts. Of course there is an indirect relationship through gold, but this currently seems to be more tenuous. The silver:dollar interplay therefore illustrates silver's role as a hybrid; part industrial commodity, part precious metal.

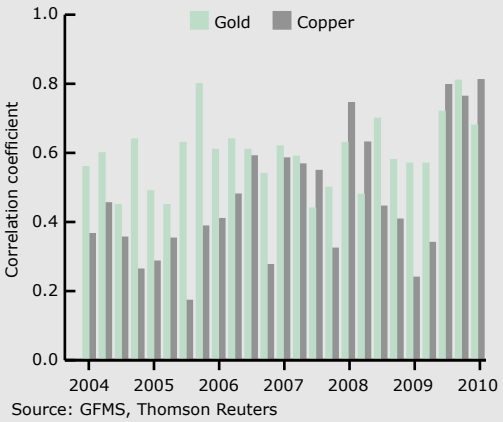
Correlations of Changes in Daily Prices

(using log-returns in spot prices)

	2009 Q4	2010 Q1	2010 Q2	2010 Q3	2010 Q4
Gold	0.81	0.68	0.56	0.47	0.58
US$/Euro	0.50	0.42	0.33	0.18	0.25
Oil (WTI)	0.22	0.47	0.38	0.29	0.06
CRB	0.26	0.47	0.46	0.28	0.14
GSCI	0.34	0.44	0.37	0.17	0.28
Copper	0.76	0.81	0.66	0.40	0.63
S&P 500	0.34	0.37	0.37	0.14	0.10

Source: GFMS

Quarterly Correlation of the Silver Price



Source: GFMS, Thomson Reuters

Gold, Silver and Copper Prices

Source: Thomson Reuters

3. Investment

- ***Investor activity was the dominant driver of the remarkable silver rally seen in 2010.***

- ***World Investment rose by 40% to a new record high of 279.3 Moz (8,689 t) last year.***

- ***2010 saw a major rise in interest in silver's physical investment arenas, as demand for coins and bars surged dramatically, while strong inflows into silver ETFs continued.***

Silver Price and Investment Indicators

	2009 Average	2010 Average	Change y-o-y
Silver Price $/oz	14.674	20.193	38%
Contango (3-mth annualized)	0.33%	0.61%	n/a
US$ Libor (3-mth annualized)	0.69%	0.34%	n/a
S&P 500 Index	948	1,140	20%
CRB Index	361	449	24%
XAU Index	147	183	25%
World GDP Growth*	-0.58%	4.77%	n/a
Advanced Countries CPI*	0.14%	1.43%	n/a

*Annual rates; Source: IMF World Economic Outlook; GFMS

Overview

Silver's extraordinary price rise in 2010 was largely a result of a sharp increase in investor interest. This can be seen in the table below entitled World Investment, which is defined as the sum of implied net (dis)investment and coins & medals demand. Last year, World Investment jumped by 40% year-on-year to a new record of 279.3 Moz (8,689 t) in GFMS' 21 year data series, equal to 26% of total silver demand. In approximate value terms this represented a net inflow into silver of $5.6 billion, compared to $2.9 billion in 2009.

Looking at fluctuations in demand during 2010, much of investment was heavily skewed to the final four months of the year. Prior to that, investor activity was relatively quiet. Although buy side interest was solid in early 2010, demand for physical bullion products and silver ETFs dropped considerably year-on-year, as the stabilization of the global financial system and a return of investor confidence in world economic growth reduced safe haven purchases. Indeed, silver's slightly better performance compared to gold in late February and March reflected in large measure many investors' growing conviction that the economic recovery was gathering momentum, and this caused growth in buy-side interest, particularly in silver futures. This optimism about economic prospects was also clear from movements in copper prices, which clearly had been exerting an important influence on investor sentiment towards silver since late 2009.

Thereafter, silver's dual nature, as a precious metal with its close link to gold and as an industrial metal by virtue of its main applications, saw silver fail to match up with the yellow metal's gains during the European sovereign debt crisis in May and June. While European contagion concerns and fears about the potential breakup of the euro encouraged a wave of investment inflows into the gold market, silver took its lead more from industrial metals. As such, the white metal fell along with the base

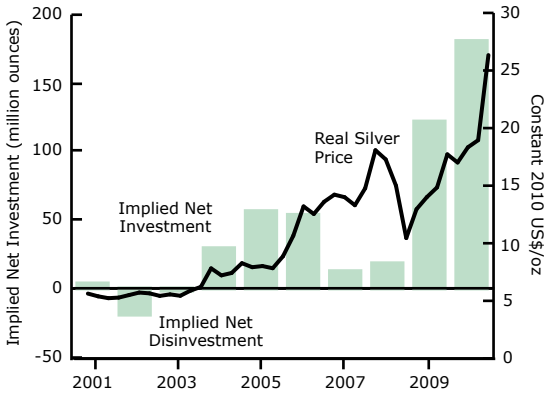
World Investment (Moz)

	2008	2009	2010
Implied Net Investment*	18.2	120.7	178.0
of which, Physical Bar Investment	114.9	-15.4	55.6
Coins & Medals	65.4	79.0	101.3
World Investment	**83.6**	**199.7**	**279.3**
Indicative Value US$(bn)**	**1.3**	**2.9**	**5.6**

* Implied Net Investment is the residual from combining all the other GFMS data on supply/demand as shown in Table 1. By definition, it therefore captures the net physical market impact of all transactions not covered by the other supply/demand variables.

**Indicative Value calculated on an annual basis using annual average silver prices.

Implied Net Investment



Source: GFMS

London Bullion Market (LBM) and Comex Turnover

(daily averages)	LBM No. of Transfers	Turnover Moz	Comex Turnover Moz	LBM/ Comex Ratio
2004	326	104	101	1.0:1
2005	331	110	110	1.0:1
2006	447	147	109	1.3:1
2007	462	114	135	0.8:1
2008	519	126	176	0.7:1
2009	340	97	159	0.6:1
2010	381	87	254	0.3:1

Source: LBMA, Comex

metals complex due to a growth in risk aversion and a more pessimistic economic outlook. Having said that, it is worth mentioning that losses were relatively limited in silver's case, helped by some fresh safe haven purchases of silver coins and ETFs over the period.

Following a summer lull in which the silver price consolidated around the $18 level, renewed optimism started to spread about the metal's prospects from September onwards, which subsequently pushed the price to a three decade high in early November. What made silver's gains even more impressive was the metal's massive outperformance of gold in the latter part of the year, with the gold:silver ratio falling sharply from 65 at end-August to 46 by the year-end, the lowest level since December 2006. In addition, silver price movements in the final four months of the year to some extent also broke with the pattern established in early 2010, during which the fate of the silver price had been mainly determined by that of copper. Although copper posted a strong increase in late 2010, its price gains were much smaller compared to that of silver in percentage terms.

Looking at the reasons behind this surge in investor interest from September onwards, the increase in investment demand was initially generated by a rebound in overall investor interest in precious metals. Considering the close relationship between gold and silver prices, it was not surprising to see that the white metal significantly benefited from an over spill from the gold rally, particularly when gold reached fresh all-time highs. This general improvement in the attractiveness of precious metals was mainly driven by expectations of further and then actual quantitative easing in the United States and Japan, US dollar weakness, negative real interest rates and ongoing worries about European sovereign debt.

Investment in Commodities

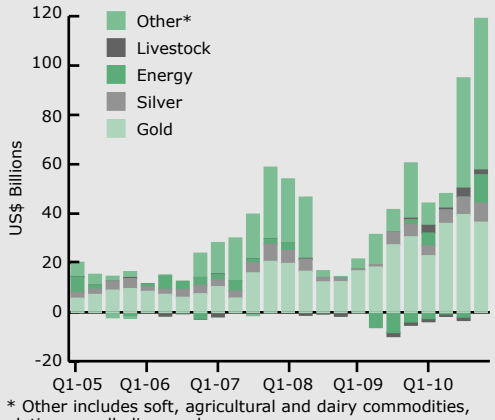
In 2010, commodity investment benefited from the backdrop of a global recovery, which underpinned demand-side fundamentals. Consumption for those commodities that were linked to industrial production were particularly strong, in large part due to the support offered by various stimulus packages. This mirrored the post-crisis slump, when industrial output suffered far stronger declines than the overall economy, causing related commodity prices to collapse in the process.

Compounding the effects of the global economic recovery on investor sentiment was persistently strong growth in developing countries, despite expectations of a slow-down in some. China was a prime example, where the economy grew by 10.3% overall in 2010 and industrial production by an even stronger 14.3%, despite concerns that a slow-down was due to emerge.

One major negative factor that weighed heavily on commodity investment last year and which, to some extent, remains in place, was the European sovereign debt crisis, although this provided a boost for gold (and silver, to a lesser extent). The fear that European governments would be unable to finance their debt, and the ensuing dire consequences for GDP growth, unnerved investors during April-June when the crisis first erupted.

Nonetheless, the prevailing environment of low interest rates continued to boost commodity investment. In part this was due to the lack of meaningful returns in the money and fixed income markets. This provided an incentive for investors to look for returns elsewhere, as did the dawning realization that this situation was likely to be prolonged. Later in the year, the rumors and eventually confirmation of the second round of quantitative easing in the United States boosted the outlook for consumption and, importantly, rekindled inflationary expectations, which were very supportive of "hard" assets such as commodities. Indeed, the value of net long futures positions grew strongly during 2010, reaching a new record high of almost $120 billion in December.

Value of Speculative Positions in 22 Commodity Futures



* Other includes soft, agricultural and dairy commodities, platinum, palladium and copper
Source: Various

However, this positive economic backdrop for investment demand for precious metals is clearly not a sufficient explanation for the scale of investor purchases in the last four months of the year, which generated a 63% increase in the silver price (13% for gold and 32% for copper). Key to this was a major change in investors' perception of silver's fundamentals, which resulted in a marked increase in silver ETFs holdings and growing investor interest in the OTC market, particularly on the long side.

First and foremost, investor sentiment was boosted by the bright outlook for silver's industrial demand on the back of the ongoing improvement in world economic growth. Indeed, investors' greater optimism was shown to be based on more than sentiment, as 2010 saw much improved demand for silver from many industrial users. Related to this is the fact that the vast majority of silver's core supply/demand fundamentals consists of largely price insensitive components. These factors, combined with a less liquid and smaller market, particularly compared with gold, resulted in a major move into the silver market by a number of hedge funds, some of which regard silver as a more leveraged alternative to gold.

Meanwhile, for other investors, the reason that silver is the metal of choice is due to it arguably being undervalued compared to gold, on the basis of historical precedents (1980's high of $50/oz), suggesting it may have greater upside potential during the prevailing climate of commodity price strength.

It is important to mention that, although much of the above investment is western-focused, strong physical investment for bullion bars in key Asian markets, namely India and China, in late 2010 provided strong support for the silver rally.

Net "Investor" Position on Comex

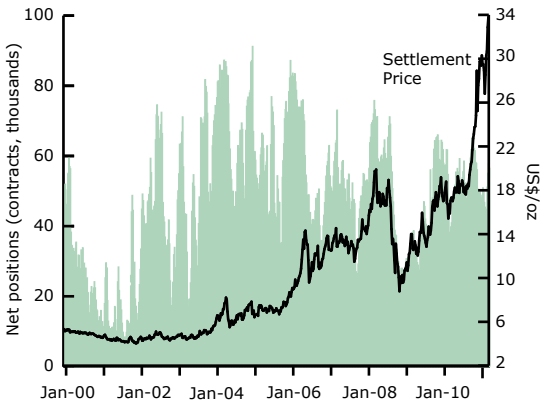
		Contracts	Moz	Price
2006		55,879	279	11.55
2007		49,755	249	13.38
2008		51,193	256	14.95
2009		44,699	223	14.70
2010	**Q1**	48,051	240	16.93
	Q2	54,481	272	18.34
	Q3	55,781	279	18.97
	Q4	52,567	263	26.52

(average non-commercial and non-reportable net futures positions, Moz equivalent and average Comex settlement price in $/oz; Source: CFTC)

Thus far in 2011, despite some profit taking early in the year, bullish investor sentiment has remained little changed, with demand holding up very well in spite of the powerful head winds from ongoing tightening of monetary policy in China, the escalating political tension in the Middle East and North Africa and the earthquake in Japan. Looking ahead, we expect buoyant investor interest to continue over the rest of the year. In part, this is because short term interest rates across developed countries are likely to remain low this year. Related to this is growing concern over the longer run threat of inflation and a belief that the massive increase in government debt will encourage more safe haven purchases of 'hard assets'. In addition, the good prospects for further growth in silver industrial fabrication over the next few years may well bring more medium to long term investors to silver in 2011, in anticipation of future price gains.

Comex: Net "Investor" Positions

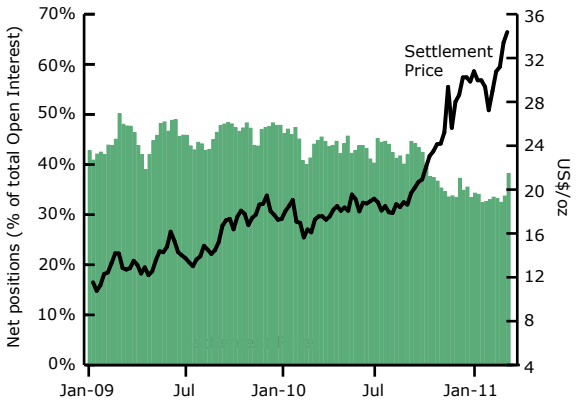
Non-Commercial & Non-Reportable Net Futures Positions & Price



Source: CFTC

Comex: Net "Investor" Positions

Weekly Net Futures Positions as a Percentage of Total Open Interest



Source: CFTC

OTC Market

Due to the lack of meaningful publicly available data on activity in over-the-counter (OTC) products in silver stemming from the absence of actual statistics on volumes and open interest, GFMS cannot give a precise estimate of the impact of OTC activity on the underlying physical market. Although the clearing statistics from the London Bullion Market can provide a gauge, this data is an imperfect reflection of investor activity. Firstly, it does not capture the trends in other OTC markets and secondly, it fails to differentiate between pure investment flows and other forms of activity. Therefore, GFMS rely on information collected through field research, which, in 2010, suggested the OTC market experienced net buying.

Buy side interest was fairly low during the first half of 2010 and it was not until the final four months of the year that it grew substantially. Initially, bullish sentiment was largely a function of a general wave of investment demand for commodities, on the back of renewed inflationary expectations coupled with investor confidence in the continued strength of industrial activity. In addition, due to the silver market being less liquid and the price more volatile, silver has been attracting growing speculative interest, with some substantial long positions being put on in late 2010, although we suspect that a fair part of these more speculative positions were closed out at year-end and early this year. Related to this are the white metal's less price sensitive supply/demand fundamentals and robust growth in its fabrication demand, particularly compared to gold. Indeed, anecdotal evidence points to there having been some investors shifting from gold positions to silver, and even in some cases putting on short gold:long silver trades.

Several other trends continued to impact on the OTC market. One of these was the more general shift back to riskier assets, which in silver's case has seen an improvement in demand for more complex options strategies and structured products. In contrast, investor interest in allocated metal accounts, although slightly positive, appeared to be relatively limited. In addition, the rise in silver margin requirements by the CME group in November 2010, to some extent, led to certain investors moving out of futures and into the OTC market. We believe that this helps to explain the strength of silver prices towards the end of the year, despite a hefty fall in net investor positions on Comex.

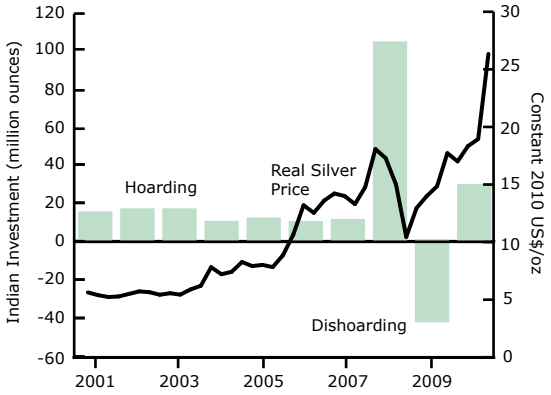
Physical Investment

As illustrated in the table on page 17, purchases of physical bullion bars accounted for a significant portion of World Investment last year. At 55.6 Moz (1,729 t), this figure represented a dramatic change compared to 2009 when modest net disinvestment was recorded.

This shift was almost exclusively driven by one country, namely **India**. After a massive 41.2 Moz (1,283 t) of net dishoarding in 2009, the Indian market saw a return to net investment of nearly 29 Moz (896 t) in 2010. Expectations of further substantial price gains was the main driver of this, with strong demand emerging from September onwards when the local price rapidly moved over Rps 40,000/kg. It is of note that, although investment demand for bars recovered last year, higher prices resulted in the investor pool shrinking. Information collected from our field research suggested that investments were mainly made in large quantities, starting from 20 kilos per investor and rising to as high as 100 kilos and on occasion even more.

Demand for silver bullion bars in **Europe** was also buoyant, rising by some 40% last year. Given escalating fears over European sovereign debt, it is not surprising that demand for physical bullion products picked up strongly in May and June, especially in Germany where high gold prices caused some small investors to favor silver due to budgetary constraints. After a quiet period over the summer, demand then recovered in the final quarter of 2010, aided by strong price appreciation encouraging speculative investors. Once again, the increase primarily came from higher sales of one and

Indian Physical Investment



Source: GFMS

Exchange Traded Funds

2010 was another year of stellar growth in silver exchange traded funds (ETFs). By end-2010, holdings of the eight silver ETFs and the four physically backed Canadian funds totalled 582.6 Moz (18,120 t), 25% or 114.9 Moz (3,652 t) above the level seen at end-2009. Given a considerably higher price, this represents an even more impressive 125% increase to a record of $17.8 billion in approximate value terms.

Looking at the intra-year development, 2010 saw the bulk of the annual increase occurring in the final four months of the year, with its more than 80% share of the rise. Unlike the first quarter of 2009 when net inflows totalled a record high of 67.7 Moz (2,104 t), the first few months of 2010 saw silver ETFs holdings broadly flat over the period. This was mainly due to easing concerns over the stability of financial markets and an improvement in the world economy since late 2009, which greatly reduced precious metals' appeal as safe haven assets.

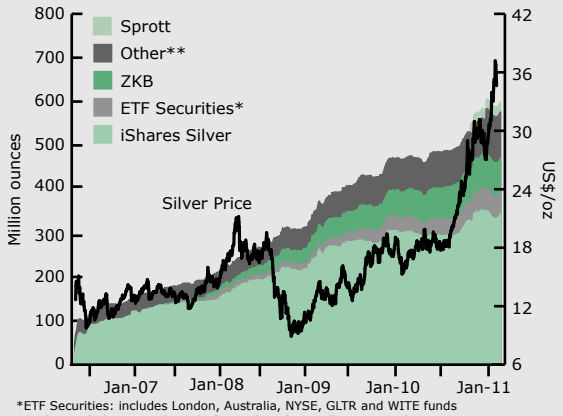
Not surprisingly, following the increasing concern over the financial and economic problems in Europe in late April, investor interest in silver ETFs recovered somewhat in May and June. However, it is worth noting that unlike late 2008 and early 2009, the surge in investment in precious metals in May and June was much more heavily focused on gold.

After a summer lull, ETF holdings eventually started to rise notably from September onwards and between then and end-2010 they grew by 92.3 Moz (2,870 t). The surging demand for silver ETFs was initially driven mainly by the anticipation of further quantitative easing in the United States, growing fears about long-term inflation and a weak dollar, which subsequently triggered a dramatic rally in the broader commodities complex.

However, these factors were not sufficient to explain silver ETFs' outperformance of gold in late 2010. Indeed, while net inflows into silver ETFs soared, gold ETFs holdings remained almost unchanged in the final quarter. Key to this is the number of new investors wanting to move into silver ETFs in response to silver's sharp rally. Investment sentiment was further boosted by the metal's improving fundamentals, as industrial fabrication rebounded strongly last year. When it comes to gold ETFs, lackluster demand also reflected certain institutional investors' preference for lower cost allocated gold positions to more expensive investments in ETFs, something that has been less noteworthy in silver's case. In large measure, this is due to the far higher storage costs allocated positions in silver suffer from compared to gold, particularly in terms of percentage of value.

Turning to individual products' performance, the iShare Silver Trust, the largest silver ETF, accounted for almost 40% of the overall increase, with its total standing at 351.1 Moz (10,922 t) at end-2010, up by 45.2 Moz (1,407 t) on the end-2009 figure. Other notable increase were achieved by Zürcher Kantonalbank, ETF Securities and Sprott Physical Silver Trust, with these vehicles registering growth of 17.2, 18.5 and 22.3 Moz (535, 574 and 694 t) respectively in 2010.

Silver ETFs Holdings



*ETF Securities: includes London, Australia, NYSE, GLTR and WITE funds
**Other:includes Central Fund of Canada, Silver Bullion Trust, Claymore, and Mitsubishi UFJ funds
Source: Respective issuers

Silver ETFs Holdings

(Moz)

	end-2009	end-2010
iShares Silver Trust	305.9	351.1
ZKB Silver ETF	59.0	76.2
ETF Securities*	33.0	51.4
Sprott Physical Silver Trust	-	22.3
Other**	69.8	81.5
Total	**467.6**	**582.6**

*includes LSE, Australia, NYSE, GLTR and WITE

** includes Mitsubishi UFJ Tokyo, Central Fund of Canada, Silver Bullion Trust, Claymore

Source: Respective issuers

five kilo bars, but demand for 15 kilo bars (which were only available since late 2009) also rose strongly, albeit from an extremely low level. It is of note that, similar to the trend seen in previous years, the demand for bullion bars grew rapidly but was outpaced by coins, due to VAT issues. (In Germany, the most important physical investment market, for instance, bars carry 19% and coins 7% VAT.)

In contrast, purchases of bars by investors in **North America** fell by 45% last year. It is important to stress here that the decline in 2010 was by no means the result of a collapse in investor interest in the metal, as 2009 was an exceptional year when fears over the stability of the global financial system and bearish sentiment toward world economic growth saw demand for bars and coins skyrocket in the first few months. At nearly 9.0 Moz (280 t), demand last year was still well above the 2008 figure. Looking at the intra-year development, the bulk of investor buying occurred in the final quarter of 2010. This was fueled by silver's strong price performance, which stoked fresh investment demand from certain investors. Moreover, bars' low premiums compared to silver coins saw some investors tend to prefer the former.

Elsewhere, **China** saw a notable increase in investor interest in bullion bars last year. Since July 2009 when the country's central bank allowed the general public to invest in silver bullion, demand for silver bars has soared, with its total estimated to amount to almost three Moz (155 t) in 2010. Growing access to investment bars through commercial banks and jewelry retailers, rising income levels, together with a desire to protect assets from sharply rising inflation and negative real interest rates, all positively impacted bar demand last year. Finally, demand for physical bars in **Japan** also grew last year, particularly from September onwards, as higher prices spurred increasing demand for 30 kilo Tocom bars from certain speculators.

Commodity Exchanges Activity

Trading volumes in Comex silver futures rose by over 60% in 2010. Total volumes reached 12.8 million contracts last year, equivalent to an average daily turnover of 254 Moz (7,914 t). End-year open interest stood at 135,970 contracts, up 9% on the previous year's level. Turnover in options registered an even more impressive increase, with its total volume for 2010 (for calls and puts combined) standing at 1.6 million contracts, 52% higher than the 2009 level.

Silver Futures Trading

(total volume in nominal million ounce equivalents)

	2008	2009	2010	Change y-o-y
Comex	44,586	40,001	64,117	60%
CME*	3,601	1,187	1,651	39%
Tocom	287	106	78	-26%
MCX	12,659	13,871	19,260	39%

*N.B.: Includes the 5,000-ounce and 1,000-ounce contracts

Source: Comex, CME Group (previously CBOT) & NYSE Euronext, Tocom, Multi Commodity Exchange of India.

The sharp increase was primarily due to growing investor interest in silver, particularly after the price breached the $20 mark in September. Furthermore, some of this was due to heavy trading in November when the CME group raised maintenance silver margins from $5,000 to $6,500 per contract on November 9th. This prompted some hefty liquidation thereafter, with the daily turnover surging to a record high of 201,216 contracts on that day.

Analysis of the data published by the CFTC in its weekly reports on non-commercial and non-reportable net positions in Comex futures and options provides a proxy for investor activity on the exchange. It should be noted, however, that CFTC reports are a somewhat imperfect gauge of investor activity, as there can actually be a degree of investment 'hidden' within the commercial side and vice-versa.

Plotting net positions against the price reveals the two often moved in tandem over the first nine months of the year. Nevertheless, it was of note that a collapse in the 'investor' net long in early 2010 only produced a relatively small drop in the price and, secondly the rise in the net 'investor' long by end-September only just surpassed its January 2010 level, in spite of the considerable gain in prices over the period.

However, the performance of the silver price and the net 'investor' long diverged considerably in the final quarter. While silver continued to trend higher, net 'investor' longs declined from October onwards, with net positions falling by more than 20% in the final quarter. In part, this is because a good deal of investment shifted into the OTC market and into silver options, as investors actively sought leveraged exposure to the rising price.

Table 2 - Silver Fabrication: Coins and Medals (including the use of scrap - million ounces)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
United States	12.3	15.3	14.5	15.5	16.6	17.6	16.0	25.4	34.3	41.7
Canada	0.9	1.0	0.3	1.3	1.6	2.9	4.3	9.0	10.8	18.6
Austria	0.3	0.4	0.4	0.5	0.6	0.5	0.5	8.3	9.5	11.6
Australia	0.8	0.6	1.3	1.3	1.0	1.4	3.5	5.9	6.5	8.8
Germany	8.1	6.0	9.7	9.7	9.7	8.7	6.3	7.2	7.5	8.0
China	1.5	2.1	2.3	2.3	1.8	1.6	2.6	2.8	3.0	3.7
Mexico	1.1	1.1	1.5	2.7	2.6	1.9	1.6	1.4	1.7	2.1
Spain	1.8	1.5	1.1	2.2	1.7	1.5	1.2	1.1	1.0	1.3
Other Countries	3.7	3.5	4.5	6.8	4.3	3.7	3.7	4.4	4.7	5.6
World Total	**30.5**	**31.6**	**35.7**	**42.4**	**40.0**	**39.8**	**39.7**	**65.4**	**79.0**	**101.3**

Coins and Medals

Last year, silver coins and medals offtake achieved a new record high, increasing by over 28% to 101.3 Moz (3,151 t). In the space of just three years the global total has risen by nearly 62.0 Moz (1,928 t), with the growth rate during this time averaging 38% per annum.

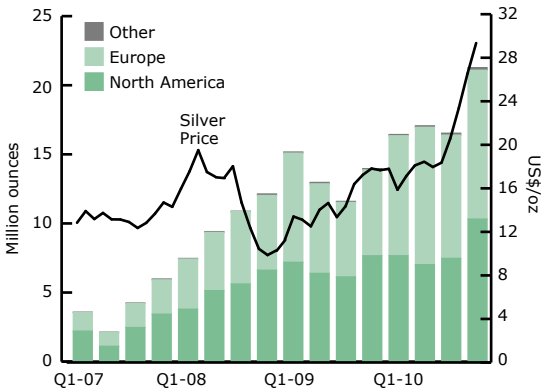
The main driving force has been a substantial rise in retail investment demand for silver bullion coins, principally in Europe and the United States. GFMS' proprietary quarterly bullion coin sales survey bears testament to this development. In 2007, total bullion coin sales (from participating mints) stood at 15.9 Moz (495 t), accounting for 40% of global coin minting. Successive increases in bullion coin sales, over the next three years, therefore saw these mints' share of global coin fabrication rise to nearly 70% in 2010.

The growth in retail coin demand that this trend reflects emerged following the collapse of Lehman Brothers (in 2008) and the ensuing financial and economic crisis. Europe's ongoing sovereign debt issues have also been an important contributory factor behind the substantial growth in the region's coin demand (which stood at 38.3 Moz, or 1,191 t in 2010). More specifically, a surge in German retail investment accounted for much of the growth. There, field research suggests that the country, where memories have resurfaced of its 1920s hyperinflation, accounted for around 80% of Europe's retail coin demand over the past three years.

The **United States** remained the largest coin fabricator, with its total outturn in 2010 rising by over 21% to 41.7 Moz (1,296 t). The close to 19% rise in Eagle bullion coin sales drove the country total higher last year. Although US retail demand grew in 2010, it appears as though an important share of US bullion coin offtake was consumed in Europe. Rationing (at times) of US Eagle sales in 2010 helped lift demand for other key bullion coins, namely the **Canadian** Maple Leaf, **Austrian** Philharmoniker and the **Australian** Kookaburra (as well as their Koala and Lunar) coins. Each country therefore saw its total coin outturn achieve record highs in 2010. In contrast, **German** minting rose by just 8%, with local coin production instead dominated by commemorative coins.

Turning to this year, coin minting has continued to strengthen, with data for the first quarter-to-date pointing to a healthy year-on-year rise in the global total. This in turn has led to shortages of coin blanks in both North America and Europe. From a sales perspective, the US Mint in January realized a new record monthly high for its Eagle bullion coin, of 6.4 Moz (200 t). Although coin sales have since returned to near 2010 levels, apparent shortages of coin-grade silver have continued to impact the market, reflecting, in part, healthy retail investment.

Silver Bullion Coin Sales



Source: GFMS Quarterly Bullion Coin Survey

4. Mine Supply

- ***Global silver mine production climbed 2% last year, to a fresh high of 735.9 Moz (22,889 t).***

- ***Supply from primary silver and lead/zinc mines continued to grow in 2010, with both sectors rising 5% year-on-year.***

- ***Silver volumes produced as a by-product of gold fell last year, declining 4%.***

- ***Primary silver total cash costs in dollar terms were flat in 2010, as benefits from higher by-product revenue were offset by input cost inflation and exchange rate movements.***

- ***In contrast to recent years, 2010 saw a marked return to net producer hedging. Miners contributed an additional 61.1 Moz (1,901 t) of supply.***

Mine Production

- ***For the eighth consecutive year silver mine production increased, by 2% in 2010, to reach a new record high of 735.9 Moz (22,889 t).***

Silver mine production increased by 17.6 Moz (548 t) to a new record high in 2010 of 735.9 Moz (22,889 t). This represented the eighth successive annual increase, and given that the silver price has been on a general upward trend since 2003, this is perhaps unsurprising. While a significant portion of growth since 2003 has been sourced from lead/zinc operations, it is worthwhile noting that the strongest sector was primary silver, which over the period saw output rise by 42%, or 66.5 Moz (2,069 t). Primary silver represented 46% of the gross global increase in silver output in 2010, contrasting with declines from other sectors such as gold and copper mining.

Top 20 Silver Producing Countries

Ranking			Output (Moz)	
2009	2010	Country	2009	2010
2	1	Mexico	114.3	128.6
1	2	Peru	123.6	116.1
3	3	China	89.2	99.2
4	4	Australia	52.5	59.9
7	5	Chile	41.8	41.0
5	6	Bolivia	42.6	41.0
8	7	United States	40.2	38.6
9	8	Poland	39.2	37.7
6	9	Russia	42.2	36.8
12	10	Argentina	17.1	20.6
11	11	Canada	19.6	18.0
10	12	Kazakhstan	19.7	17.6
13	13	Turkey	12.5	12.3
16	14	Morocco	8.5	9.7
14	15	India	9.4	9.7
15	16	Sweden	8.7	9.2
17	17	Indonesia	7.7	6.9
18	18	Guatemala	4.2	6.3
19	19	Iran	3.4	3.4
20	20	South Africa	2.8	2.8
		Rest of World	**19.1**	**20.6**
		World Total	**718.3**	**735.9**

Source: GFMS

Top 20 Silver Producing Companies

Ranking			Output (Moz)	
2009	2010		2009	2010
1	1	BHP Billiton	42.0	46.6
3	2	Fresnillo plc. [1]	37.9	38.6
2	3	KGHM Polska Miedź	38.7	37.3
4	4	Pan American Silver Corp. [1]	23.0	24.3
16	5	Goldcorp Inc. [3]	11.8	23.0
5	6	Cia Minera Volcan [2,3]	21.0	20.0
6	7	Hochschild Mining	18.8	17.8
7	8	JSC Polymetal	17.3	17.3
9	9	Coeur d'Alene Mines [1]	16.9	16.8
11	10	Sumitomo Corp. [3]	14.3	14.4
8	11	Kazakhmys plc.	16.9	14.1
10	12	Cia. de Minas Buenaventura [2]	14.8	13.5
13	13	Southern Copper Corp.	13.2	12.6
15	14	Xstrata Zinc [4]	12.7	11.6
14	15	Teck Resources	13.0	11.5
17	16	Eti Gümüş A.Ş.	11.3	11.5
12	17	Kinross Gold [5]	14.0	11.3
18	18	Hecla Mining [1]	11.0	10.6
19	19	Yamana Gold	10.5	10.0
20	20	Industrias Peñoles	9.6	9.2

1 Primary producer 2 Includes production from minority subsidiaries
3 Estimate 4 Reported silver in concentrate and lead bullion
5 Reported sales

Source: Company Reports; GFMS

Many of the gains at the mine level in 2010 came not from the start of new operations, but from the build-up in production from projects commissioned in 2009, many of which were still undergoing expansion at the end of 2010. Central to the rise were properties in Mexico, where primary silver mines added 9.0 Moz (280 t), helping establish it as the largest silver producing country in 2010.

While providing an obvious growth incentive for the primary miners, the buoyant silver price constitutes an increasingly important by-product credit for polymetallic producers. However, silver mining from these sources did fall in a number of cases in 2010, where generally strong metal prices encouraged producers to prioritize high base metal grade ore in their mining and processing activities, despite the rising value of any contained silver. Moving into 2011, we expect companies to be advancing their development plans at full speed, especially if margins remain high.

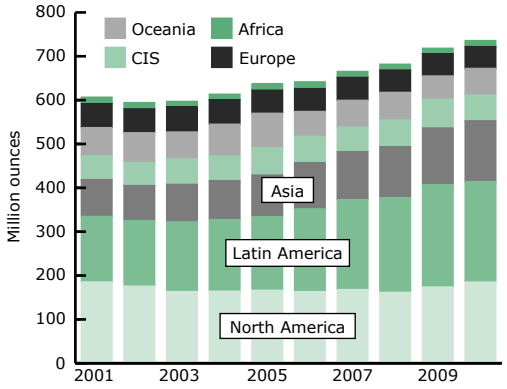
North America

North American mine production continued its recovery in 2010. Output rose by 6% to 185.1 Moz (5,759 t), as a marked increase from Mexico outweighed declines in both Canada and the United States.

Mexican production grew by 13% year-on-year, to reach a fresh high of 128.6 Moz (3,999 t). As a result, Mexico overtook Peru, becoming the largest producer of silver globally, with additions from the lead/zinc, primary silver and by-product gold sectors all contributing. The principal driver of growth both in Mexico and, for that matter, globally, was Goldcorp's Peñasquito (primary zinc mine). The Peñasquito sulfide plant entered pre-commissioning in the fourth quarter of 2009, and despite only reaching commercial production in September, a total of 10.9 Moz (340 t) was produced from sulfide ores in 2010. Strong gains also came from full years of production at a number of other mines that commenced operations in 2009; notably Coeur d'Alene's Palmarejo, which added 2.8 Moz (88 t), and Agnico Eagle's Pinos Altos, which added 1.1 Moz (33 t).

At the country's established primary silver operations, First Majestic Silver Corp's La Encantada mill expansion project achieved commercial production in April 2010, increasing production three-fold, to 3.9 Moz (120 t) in 2010. At Fresnillo's operations, 1.2 Moz (37 t) was

World Silver Mine Production



Source: GFMS

produced from development work at the Saucito project. Development ore was accommodated at the Fresnillo plant, where milling capacity had recently been upgraded from 7,500 tpd to 8,000 tpd. Silver output at the Fresnillo mine also rose, by 1%, as higher volumes more than offset a decrease in grades. Silver produced as a by-product from Peñoles' base metal operations were broadly unchanged year-on-year. Elsewhere, production also rose at Pan American Silver Corp's Alamo Dorado and Southern Copper Corp's IMMSA operations, as mining targeted higher grade ores. The only noteworthy decline, of 0.6 Moz (20 t), came from Gammon Gold's El Cubo mine, where operations have been suspended since June as a result of an ongoing labor dispute.

On the back of strong growth in 2009, output in the **United States** fell by 4%, to 38.6 Moz (1,200 t). Following a strong performance in 2009, output from Rio Tinto's Bingham Canyon operation decreased by 23%, to 3.8 Moz (117 t) last year. Although mill throughput rose, silver grades fell by 20% from 2009 levels, when mine planning was focused on zones with higher copper, gold and silver grades, due to lower molybdenum prices. At the country's second largest silver producer, Teck's Red Dog, silver output fell by 15%, with lead production also declining by a similar margin due to the impact of lower ore grades and recoveries; a result of processing weathered ore from a shallow section of the newly developed Aqqaluk deposit. At Hecla Mining's Greens Greek and Lucky Friday mines, production declined by a consolidated 0.4 Moz (13 t), as ore grades declined by 5% and 6% respectively, outweighing higher mill throughputs at both operations.

Table 3 - World Silver Mine Production (million ounces)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Europe										
Poland	38.0	38.9	44.2	43.8	40.5	40.5	39.6	39.0	39.2	37.7
Sweden	8.8	9.4	9.9	9.4	9.1	8.6	9.4	8.4	8.7	9.2
Greece	2.0	2.4	0.1	0.0	0.0	0.8	1.1	1.1	0.9	0.9
Portugal	0.7	0.6	0.7	0.8	0.8	0.6	0.9	1.3	0.7	0.7
Spain	1.8	0.4	0.1	0.0	0.2	0.1	0.1	0.1	0.2	0.4
Bulgaria	0.8	0.8	0.7	0.6	0.7	0.6	0.4	0.4	0.5	0.4
Macedonia	0.5	0.4	0.2	0.1	0.2	0.4	0.4	0.4	0.1	0.1
Romania	1.2	1.0	0.9	0.9	0.9	0.4	0.1	0.0	0.1	0.1
Italy	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Serbia and Montenegro	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ireland	0.3	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.0
Other Countries	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Europe	**54.7**	**54.5**	**57.2**	**55.8**	**52.7**	**52.2**	**52.3**	**51.0**	**50.6**	**49.7**
North America										
Mexico	88.7	88.3	82.6	82.6	93.1	95.5	100.8	104.1	114.3	128.6
United States	55.9	43.4	39.9	40.2	39.2	36.7	40.5	36.0	40.2	38.6
Canada	40.7	44.1	41.0	41.6	34.2	31.2	26.7	21.5	19.6	18.0
Total North America	**185.3**	**175.9**	**163.5**	**164.4**	**166.5**	**163.3**	**168.0**	**161.6**	**174.0**	**185.1**
Latin America										
Peru	86.0	88.8	93.9	98.4	102.6	111.1	112.6	118.3	123.6	116.1
Chile	43.4	38.9	42.2	43.7	44.3	51.5	62.0	44.9	41.8	41.0
Bolivia	12.2	14.9	15.8	14.0	12.8	15.2	16.9	35.8	42.6	41.0
Argentina	5.6	4.1	4.4	4.6	5.0	6.2	7.8	10.3	17.1	20.6
Guatemala	0.0	0.0	0.0	0.0	0.3	1.6	2.8	3.2	4.2	6.3
Honduras	1.6	1.8	1.7	1.6	1.7	1.8	1.7	1.9	1.9	1.9
Dominican Republic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6
Brazil	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4
Colombia	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.4
Nicaragua	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Uruguay	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Other Countries	0.1	0.1	0.1	0.1	0.4	0.5	0.5	0.5	0.5	0.6
Total Latin America	**149.5**	**149.1**	**158.8**	**163.1**	**168.0**	**188.6**	**205.2**	**215.8**	**233.2**	**229.1**
Asia										
China	55.6	52.9	58.8	63.2	67.0	75.3	78.7	82.9	89.2	99.2
Turkey	3.7	3.7	3.6	4.0	5.2	6.0	7.5	10.1	12.5	12.3
India	1.7	2.2	2.9	3.4	3.3	5.9	5.7	6.8	9.4	9.7
Indonesia	12.0	10.7	9.6	8.6	9.9	7.9	8.6	8.0	7.7	6.9
Iran	2.6	2.6	2.6	2.7	2.9	3.2	2.9	3.2	3.4	3.4
Papua New Guinea	2.2	2.1	2.0	1.7	1.5	1.6	1.4	1.7	2.1	2.1
Philippines	1.1	0.3	0.3	0.3	0.6	0.8	0.9	0.5	1.1	1.2
Mongolia	1.2	1.1	1.1	1.2	1.2	1.2	1.2	1.1	1.2	1.1
North Korea	0.6	0.7	0.8	0.8	0.8	0.9	0.9	0.9	0.8	0.8
Thailand	0.2	0.7	0.6	0.5	0.6	0.5	0.4	0.4	0.7	0.7
Dem. Rep. of Laos	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.2	0.5	0.6
Japan	2.7	2.7	2.7	1.7	1.0	1.1	0.4	0.4	0.4	0.3
Other Countries	0.4	0.5	0.6	0.6	0.5	0.4	0.4	0.3	0.3	0.3
Total Asia	**84.0**	**80.2**	**85.7**	**88.8**	**94.7**	**105.0**	**109.3**	**116.5**	**129.3**	**138.7**

Table 3 - World Silver Mine Production (million ounces)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Africa										
Morocco	9.1	8.5	6.2	6.7	7.9	7.9	7.1	8.1	8.5	9.7
South Africa	3.5	3.6	2.8	2.3	2.8	3.0	2.8	2.7	2.8	2.8
Zambia	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.5	0.6
Tanzania	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Botswana	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Ghana	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Mali	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dem. Rep. of the Congo	0.0	0.1	1.2	1.1	1.7	2.2	2.3	1.1	0.0	0.0
Namibia	0.6	0.6	0.9	0.9	1.0	1.1	0.3	0.2	0.0	0.0
Other Countries	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Total Africa	**14.2**	**13.8**	**12.1**	**12.2**	**14.6**	**15.4**	**13.6**	**13.3**	**12.5**	**13.9**
Oceania										
Australia	63.3	66.8	59.9	71.5	77.4	55.6	60.4	61.9	52.5	59.9
New Zealand	0.9	0.9	1.0	1.0	1.5	1.1	0.6	1.0	0.5	0.5
Fiji	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Oceania	**64.3**	**67.8**	**60.9**	**72.5**	**78.9**	**56.7**	**61.0**	**63.0**	**53.0**	**60.4**
CIS										
Russia	20.9	22.5	29.5	30.3	32.5	31.3	29.3	36.4	42.2	36.8
Kazakhstan	30.2	27.3	25.8	22.6	26.1	25.6	22.8	20.2	19.7	17.6
Armenia	1.2	1.3	1.3	1.3	1.2	1.3	1.2	1.3	1.7	2.2
Uzbekistan	1.7	1.6	1.7	1.9	2.0	2.0	2.5	2.4	1.7	1.9
Kyrgyzstan	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.3	0.3
Tajikistan	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other Countries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total CIS	**54.2**	**52.8**	**58.5**	**56.2**	**62.0**	**60.4**	**56.0**	**60.7**	**65.7**	**59.0**
World Total	**606.2**	**593.9**	**596.6**	**613.0**	**637.3**	**641.7**	**665.4**	**681.9**	**718.3**	**735.9**

Canadian production fell by 8%, to 18.0 Moz (559 t) last year, as losses at the country's largest silver producers more than offset a number of small additions. On the negative side, silver in concentrate production at Canada's biggest silver producing mine, Xstrata Zinc's Brunswick, declined 6%, to 5.4 Moz (168 t), following a change to the mine plan, to extend the operation out to 2013. At the country's other major silver producing operation, silver output from Agnico Eagle's LaRonde dropped by 0.3 Moz (11 t), where a 9% decline in grade prevailed over higher mill throughput. The largest gain was at Vale Inco's Sudbury (nickel) complex, where full scale production was re-started following an end to the 12-month labor dispute in July, adding 0.2 Moz (8 t) year-on-year. Also of note, in the Yukon fresh production came from commissioning of Alexco Resources' primary silver Bellekeno project and Yukon Zinc Corp's Wolverine mine.

Latin America

Latin America was one of three regions to record an overall decline in 2010, falling by 4.1 Moz (127 t). Many of the losses came from primary silver or gold mines.

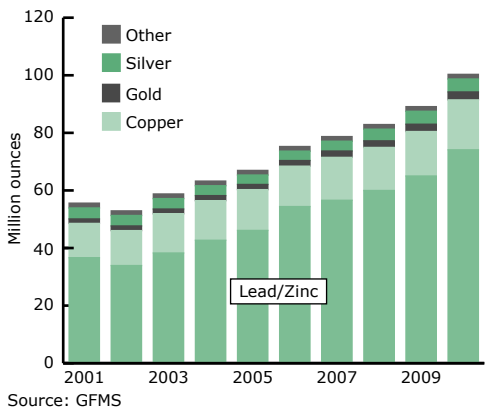
Supply from **Peru** fell by the largest margin, by 6% or 7.4 Moz (231 t), as two of the largest primary silver mines recorded lower production. The largest fall in the country was at Hochschild's Arcata, where output fell by 1.4 Moz (45 t). Processed grades were reduced to both extend mine life and to mitigate geotechnical problems. Secondly, at Buenaventura's Uchucchacua, silver output contracted by 12%, or 1.3 Moz (40 t) due to lower silver grades and recoveries, and the effects of a 14 day strike in the first quarter. At Brocal, efforts were focused on optimizing copper production, at the expense of zinc and silver output, resulting in a fall of 1.3 Moz (41 t), while the Antamina joint-venture saw a decrease of 0.9 Moz

(29 t) as mining moved into areas of lower zinc grades, with lower associated silver. Among Minera Volcan's operations, cost cutting activities and a fall in overall throughput led to a 5% reduction in silver production. Notable were losses of 1.4 Moz (44 t) at Andaychagua and 0.8 Moz (25 t) at Cerro de Pasco. Smaller decreases were observed at Pan American Silver's Huaron and Hochschild's Selene; the former was due to a decline in recoveries and grades, while the latter was due to the cessation of mine production in May 2009. Some respite from the losses came from Hochschild's Pallancata, which increased production by 1.7 Moz (53 t) due to increased mill throughput, as the Selene plant switches to processing exclusively ore from Pallancata.

Output from **Bolivia** also fell, by 1.7 Moz (51 t), due to production losses at several operations. Coeur d'Alene's San Bartolomé fell by 0.8 Moz (24 t), primarily due to a suspension of mining areas 4,400m and higher above sea level. Mitigating this, mining progressed at the high grade Huacajchi deposit last year. Production is also estimated to have fallen at Sumitomo Corp's San Cristóbal lead/zinc operation by 16%, partly due to a strike in August. Sumitomo has recently secured a $250 million loan to increase production next year through capacity increases at the mine. Orvana Mineral's Don Mario also saw a reduction in silver output, owing to lower processed grades. It is interesting to note that at the time of writing the Bolivian government is reviewing draft legislation aimed at renegotiating mining contracts within the country to require a greater degree of reinvestment of mining proceeds in Bolivia.

Production in **Chile** is estimated to have remained almost flat, with a decline of just 0.8 Moz (25 t). Output from the country's primary gold mines declined by 9%, with losses at Kinross Gold's La Coipa and Yamana's El Peñón totaling 1.5 Moz (47 t). At the former, an increase in the clay content of processed ores impacted both process rates and recoveries, while at El Peñón lower grades and recoveries were responsible. The country's copper industry, which produces the majority of the country's silver, had a better year in terms of silver output, which increased by 3%, the bulk of which came from a 0.8 Moz (24 t) increase at BHP Billiton's Escondida. Elsewhere, a small increase was seen from Codelco's collective copper operations, and from a throughput expansion at Antofagasta's Los Pelambres. November also saw the start of mining activity at Antofagasta's Esperanza, which is expected to produce 1.1 Moz (35 t) of silver annually.

Chinese Silver Mine Production by Source Metal



Source: GFMS

Two countries in the region recorded meaningful production increases. In **Argentina**, output grew by 20%, or 3.5 Moz (107 t). Output was boosted considerably by the ramp-up of Silver Standard's Pirquitas; after completing commissioning in December 2009, the operation increased volumes throughout 2010, and produced a total of 6.3 Moz (196 t) for the full year. In addition, Hochschild's San José, the Alumbrera joint venture and Pan American Silver's Manantial Espejo all increased production. The only loss of note in the country was at Coeur d'Alene's Martha, which saw output fall by 2.1 Moz (66 t), due to an approximate halving of total milled tonnage. **Guatemala** also raised production, due to Goldcorp's Marlin, the country's only large-scale formal silver producing mine, which increased silver production by 2.1 Moz (65 t), due to recovery improvements in the process plant and higher grade mill feed.

Asia

Chinese domestic silver production is estimated to have increased for the eighth consecutive year, reaching 99.2 Moz (3,085 t). The bulk of Chinese domestic silver is sourced from the lead/zinc sector, and although lead/zinc production in China is thought to have increased appreciably throughout 2010, given the paucity of information available about Chinese domestic production, we err on the side of caution. Silver recovered from copper mining also increased, and the combined growth from these metals is thought to have accounted for 9.8 Moz (304 t) of the rise. Although a relatively small component of Chinese silver production, silver volumes recovered from gold mines continued to rise last year, along with the country's mined gold output.

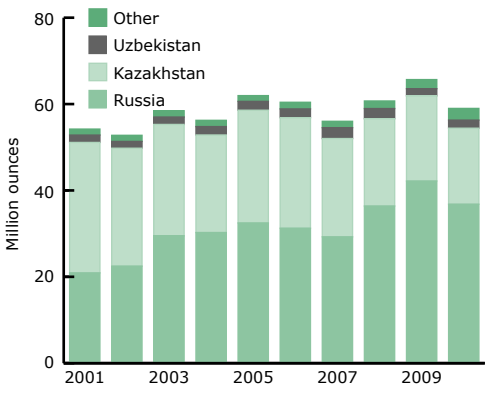
GFMS analyses mine production based on domestic ores, and it is noteworthy that although some lead/zinc-focused companies reported reductions in output of silver, such as Shuikoushan silver and Jiangxi Nonferrous Metals Co. Ltd., generally these reductions reflected the sourcing of imported lead/zinc concentrate with a lower silver content. Silver volumes from domestic ores are thought to have been maintained. In contrast, copper producers such as Jiangxi Copper and Tongling Nonferrous Metals recorded overall increases to silver output (again, these are assumed to include imported material). Total refined production in China increased by 12% year-on-year.

Elsewhere in Asia, production at the second and third largest producers, **Turkey** and **India**, remained relatively constant in 2010, totaling 22.0 Moz (685 t). However, a 0.8 Moz (26 t) decline was recorded in **Indonesia**, attributable to planned lower by-product production from Freeport McMoRan's Grasberg copper-gold mine.

Oceania

Australian production grew to 59.9 Moz (1,864 t), up 14% year-on-year, from an 11-year low of 52.5 Moz (1,633 t) in 2009, with growth coming from both the primary and by-product silver sectors. The biggest increase came from primary silver mines, as output from BHP Billiton's Cannington rose 14%, to become the world's largest silver producer in 2010. Output was boosted by an 11% increase in head grade and a return to normal production levels following unseasonably high rainfall that caused flooding in the first quarter of 2009. With regard to the lead/zinc mines (accounting for 30% of the country's production), growth was underpinned by increases at Minmetals Resources' Century and Golden Grove mines, with the former benefitting from the conclusion of a multi-year waste stripping program which helped lift production by 2.3 Moz (71 t) in 2010. Offsetting these gains were a number of heavy losses from established lead/zinc operations, most notably Xstrata Zinc's Mount Isa, where silver (in crude lead) output was 13%, or 1.0 Moz (32 t) lower, year-on-year. At Minmetals Resources' Rosebery, output in the first half of 2010 was impacted by local bush fires and underground rehabilitation work required to bring additional stopes into production.

CIS Silver Mine Production



Source: GFMS

Commonwealth of Independent States (CIS)

Silver mine production in the CIS recorded a 6.7 Moz (208 t) decline in 2010, outweighing the growth seen in 2009. The region's largest producer, **Russia**, posted the largest decline in percentage terms, falling by 13%, to 36.8 Moz (1,145 t). This was largely driven by the base metal mining sector, where silver is mainly recovered as a by-product of lead and zinc. Despite output of these two metals increasing during 2010, volumes of recovered silver declined by 27%, although this represents a return to normality from a high level in 2009.

In contrast, silver mining from gold and silver focused operations, which comprise the bulk of Russian output, saw only a moderate decline. Volumes from the country's largest silver miner, Polymetal, remained flat at 17.3 Moz (538 t), as a throughput expansion at the Dukat processing plant was not enough to counteract lower mined grades at the main Dukat mine. Kinross Gold saw output of silver fall from Kupol, with a 19% reduction in processed grade due to ground control issues.

In **Kazakhstan**, production of silver fell by 11%, to 17.6 Moz (548 t), primarily from a reduction in output at Kazakhmys' precious metals refinery at the Balkash complex. While mined ore grades and metal contained in feed at Balkash remained similar to 2009, output in that year was higher due to the additional processing of previously mined stockpiles. Elsewhere in the region, small additions to production came from **Uzbekistan** and **Armenia**. In the former, this came mainly from the country's gold operations, while in the case of the latter, output rose at Dundee Precious Metals' Kapan.

Europe

European production dropped 2% last year, to 49.7 Moz (1,547 t). This was largely a consequence of silver output at the region's largest producer, KGHM Polska

An Overview of Corporate Transactions in 2010

Three of the largest silver-related transactions during 2010 involved a non-core asset being sold by a major producer. These included Goldcorp's sale of San Dimas to Primero Mining, Escobal to Tahoe Resources and also the sale of Silver Standard's Snowfield and Brucejack properties to Pretium Resources. The rationale behind these deals has been to unlock additional value by placing these assets with dedicated management teams in earlier stage companies.

The sale of the operating San Dimas gold-silver mine, which produced 4.5 Moz (141 t) of by-product silver in 2010, was completed during August, in a cash and shares transaction valued at US$487 million. Goldcorp's other disposal, of the Escobal project, was completed in June, for consideration of 40% of Tahoe's issued shares on a fully-diluted basis and US$225 million in cash. At end-2009, the project contained an Indicated resource of 130.1 Moz (4,047 t) silver and an Inferred resource of 187.5 Moz (5,835 t) silver. An updated NI 43-101 resource and positive preliminary economic assessment was released in November.

In December 2010 Silver Standard sold the contiguous Snowfield and Brucejack gold projects to the newly-formed Pretium Resources Inc. The total consideration was US$442 (C$450) million, comprising US$229 (C$233) million in cash and the balance by way of Pretium shares valued at the IPO price, which amounted to 42.3% of the latter's share capital. In February 2011 Silver Standard announced its intention to consolidate ownership of the San Luis project in Peru with the purchase of the outstanding 45% share from Esperanza Resources in a deal worth C$28 million. Hochschild Mining announced in October that it had increased its holding in the Inmaculada project to 60%.The main terms of the deal included an initial cash payment of US$15 million to International Minerals Corp and agreement to fund 100% of the project's first US$100 million of capital expenditure. Hochschild also disposed of its 35% stake in Lake Shore Gold for total net proceeds of C$472 million.

Silver streaming was a less prominent feature of the market last year. Silver Wheaton entered into three silver streaming purchase agreements. In February it acquired the life-of-mine silver and gold production from Augusta Resources' Rosemont copper project for US$3.90/oz of silver and US$450/oz per ounce of gold, in return for an up front payment of US$230 million. In the same month Silver Wheaton converted a debenture holding in Pan American into an agreement to acquire 12.5% of the life-of-mine silver output from the Loma de La Plata zone of the Navidad project in Argentina. Subject to finalizing terms, Silver Wheaton will pay Pan American US$32 million plus $4/oz or the spot price (whichever is lower) for each silver ounce delivered. At the end of the year, Aurcana announced the completion of its silver stream buy-back from Silver Wheaton relating to 50% of silver output from its majority-owned La Negra mine for US$25 million and a final delivery of 206,000 ounces (6 t) of silver.

Miedź in **Poland**, falling to 37.3 Moz (1,159 t), where ore extraction fell by 5% in the first six months of 2010. In **Ireland**, output dropped to negligible levels following the closure of Lundin's Galmoy mine in mid-2009. On the other hand, production from **Sweden** rose by 6% to 9.2 Moz (285 t). Increases were recorded at all three of Boliden's properties, accounting for a total 0.6 Moz (17 t) addition. In particular the Aitik copper mine lifted silver output by 48%, following a mill expansion in mid-2010.

Africa

African silver mine production jumped by 11% last year, as Morocco, Zambia and South Africa, the only producers of significance, posted increases. Copper-sourced output in **Zambia** continued to pick up, while in **Morocco**, Managem's Imiter primary silver mine increased production modestly, helping lift the country's output to 9.7 Moz (301 t). **South African** production strengthened marginally; higher by-product output from zinc mines helped mitigate the continually declining gold sector.

Outlook

- ***Silver mine production is expected to record another annual increase in 2011, with increases across the gold, silver and lead/zinc sectors.***

Global silver mine production growth is expected to continue in 2011, indeed accelerating to a new record high. Additions to production will come from both the primary and by-product sectors (gold and lead/zinc). The pipeline of projects is robust, with a significant portion of the growth we anticipate coming from the continued expansion of existing mines from 2010 levels, in addition to "ramp-up" gains from properties recently commissioned. Furthermore, so far in 2011 high silver prices continue to enhance the margins of those polymetallic projects containing significant quantities of silver. Although we expect some downside and consolidation of the prices of copper, lead and zinc in 2011, when offset by continued high silver prices the

Average Prices of Source Metals

($/ton)	2006	2007	2008	2009	2010	Change y-o-y
Lead	1,288	2,595	2,085	1,726	2,148	24%
Zinc	3,273	3,250	1,870	1,659	2,159	30%
Copper	6,731	7,126	6,952	5,164	7,539	46%
Gold ($/oz)	604	695	872	972	1,225	26%

World Mine Production of Source Metals

(Thousand tons)	2006	2007	2008	2009	2010	Change y-o-y
Lead	3,546	3,649	3,779	3,847	4,088	6%
Zinc	10,430	11,125	11,833	11,315	12,309	9%
Copper	14,991	15,418	15,411	15,804	15,926	1%
Gold	2,483	2,474	2,406	2,584	2,652	3%

Source: LME, Thomson Reuters, ILZSG, GFMS Gold Survey 2010 Update 2, GFMS Copper Survey 2011

profitability of production at polymetallic silver-bearing projects will remain high.

Looking at some of the specific projects which will drive growth, much of the increase will come from the Americas, especially Mexico, where we forecast another double digit percentage silver production increase in 2011. Key developments in this country will include the continued ramp-up of the processing plants at Goldcorp's Peñasquito and Minera Frisco's San Francisco del Oro towards design capacity, expanded activities at Fresnillo's Saucito, and the start up of Minera Frisco's Concheño. Together these operations should add over 20 Moz (622 t) to Mexican output in 2011. In Bolivia, Sumitomo Corp's San Cristóbal should see a meaningful increase of several million ounces, as production recovers from reduced levels in 2010. In Argentina, we expect continued increases from Silver Standard's Pirquitas, while in Canada, ramp-ups at Alexco Resources' Bellekeno and Yukon Zinc's Wolverine should boost silver volumes.

By-Product Analysis

- ***The primary silver sector accounted for 46% of the gross global increase in silver mine production in 2010, as output climbed to 223.4 Moz (6,947 t).***

- ***Output of silver from other metals posted a mixed performance. While silver sourced from lead and zinc mining was up by a total of 5%, output from the gold sector fell by 4%, and copper by 1%.***

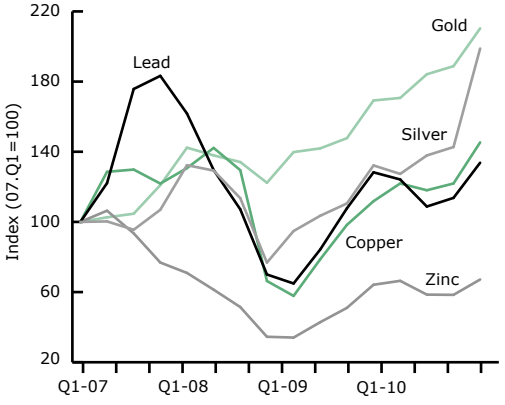
In the primary sector, headline gains in the Americas came from a full year of production at Silver Standard's Pirquitas and commissioning of the mill expansion at First Majestic Silver's La Encantada. While in Australia, output at BHP Billiton's Cannington rose 14% year-on-year. On the back of strong gains last year, output for the gold sector stalled slightly in 2010, declining 4%.

Gains from the ramp-up of Agnico Eagle's Pinos Altos, and the benefits of improved plant efficiencies at Goldcorp's Marlin, were outweighed by losses at Kinross Gold's Kupol and La Coipa among others.

Base metal prices during 2010 built on the gains seen in 2009, as the markets continued to recover from the financial and economic crisis triggered in late 2008. Average annual prices in 2010 for copper, lead and zinc increased by 46%, 24% and 30% respectively year-on-year. Copper prices surpassed the peak reached in the mid/late 2000s' bull market. For lead and zinc, although the previous highs were not exceeded, the price gains were notably swift.

The base metal sector was supported by a strong rebound in consumption in 2010. The improvement in demand primarily reflected a cyclical recovery in consumption from the mature economies and yet another year of significant growth from the emerging economies. China remained the key driver of demand growth within this sector. However, GFMS also notes the strong contribution from the ASEAN countries as these economies continue to exhibit metals-intensive growth.

Indexed Silver & By-product Metal Prices



Source: Thomson Reuters

Silver Output by Source Metal

(million ounces)

	2009 Output	% of Total	2010 Output	% of Total	Change y-o-y
Primary	212.7	30%	223.4	30%	5%
Gold	86.2	12%	82.6	11%	-4%
Lead/Zinc	252.1	35%	263.8	36%	5%
Copper	164.8	23%	162.8	22%	-1%
Other	2.5	0%	3.3	0%	33%

Source: GFMS

Data from the major statistical organizations confirm the strong base metal consumption growth that occurred in 2010. According to the International Lead Zinc Study Group (ILZSG), lead demand increased by 7% last year to 9.4 Mt. Growth was supported by a recovery in vehicle output, boosted in large part by various sales incentive packages and also by the ever-growing vehicle population, which, in turn, supports the replacement battery market; the largest end-use market for lead.

Zinc demand also benefited from the swift rebound in the automotive sector. However, demand growth from the key non-residential sector was slower to emerge. In common with most industrial commodities, copper benefited from the cyclical rebound in economic activity. Nevertheless, copper's heavy reliance on the construction sector, which in most economies lagged behind other sectors, limited growth in demand. There was also some substitution pressure associated with high copper prices.

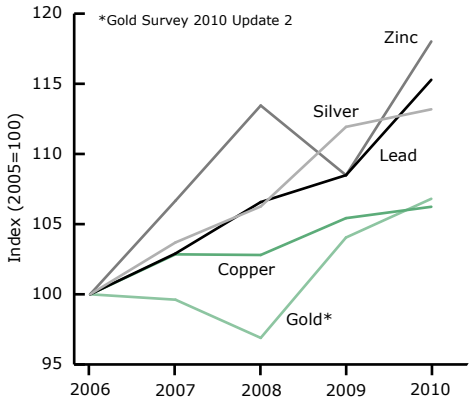
From a supply perspective, the combination of a sharp improvement in demand, accompanied by higher prices, encouraged increased mine output. This was particularly evident with regard to lead and zinc mines, where global concentrate output increased by 6% and 9% respectively last year. The increase in copper mine output was much lower, due to several structural limits, which make the industry less able to respond to high prices. Many copper orebodies are large and relatively low grade, and thus have reduced scope to alter production schedules over the short term. In addition the copper mining industry has been subject to disruption, such as labor disputes and technical difficulties, and as a result production has not responded as one might expect, given the new all-time price high in excess of $10,000/t reached in 2011.

The mining sector not only benefited from higher metal prices, but also from reductions in treatment and refining charges due to the tightness in the concentrate markets. Notwithstanding the previously mentioned constraints on production growth, favorable conditions have encouraged production increases where possible. Global zinc mine production rose by just over 1.0 Mt in 2010, with the majority of this increase, just over 0.6 Mt, from China. Another key contributor was Australia, where the resolution of a number of technical problems allowed a 13% increase in zinc concentrate output last year. Elsewhere, most of the data confirms that the limited magnitude of increases to zinc concentrate production capacity have restricted the increase in refined output, despite the high prices.

Similar trends have also been seen in the lead market, with China being the key driver of expansion in 2010. GFMS estimate that global lead concentrate output increased by 245,000 t last year, with China also responsible for most of the mine supply growth. Increases elsewhere were limited by a lack of new capacity and by logistics problems at Ivernia's Magellan mine in Western Australia. However, we note that this operation does not produce any by-product silver.

The other key trend of note with regard to by-product silver output is the limited increase in global copper concentrate output, despite favorable conditions prevailing. Mine output increased by just under 1% in 2010. The additions to output were mainly in the African Copperbelt, a region that yields relatively small volumes of silver. The other main area of copper concentrate output growth last year was China, where production increased by an estimated 11%. It should

Indexed Global Metal Mine Production



Source: ILZSG, GFMS

also be pointed out that a significant proportion of copper production growth has come from the solvent extraction, electro-winning (SX-EW) ore processing route, that does not yield any silver. GFMS estimate that in 2005, this source accounted for 18% of global copper output; by 2010 its share had grown to 21%.

Production Costs

• ***For the second successive year, silver mine cash costs were relatively flat year-on-year, falling by less than 1%, compared to a revised 2% rise in 2009.***

Silver cash costs for 2010 stood at $5.27/oz, almost unchanged from a revised figure of $5.29 for the prior year. It should be noted that GFMS' analysis excludes mines for which silver is not the principal metal (i.e. providing the largest proportion of mine net revenue). Given that 30% of global supply came from primary silver operations in 2010, our cost sample size of 107.8 Moz (3,352 t) represented 48% of global primary silver supply, where data is available. Even those mines considered 'primary silver' benefit from associated by-product metals, most commonly gold, copper, lead and zinc. Therefore the flat outcome of 2010 could be construed as surprising, given the performance of the prices of the metals with which silver is most commonly associated. Prices of gold, copper, lead and zinc all increased, by 26%, 46%, 24% and 30% respectively year-on-year. However, in many cases input cost pressures and adverse currency effects served to offset these benefits somewhat.

Silver Mine Production Costs

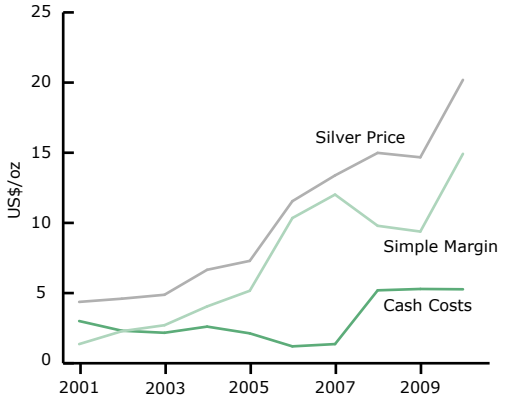
(US$/oz unless stated)	2008	2009	2010
Total Cash Costs	5.20	5.29	5.27
Average Spot Price	14.99	14.67	20.19
Sample Size (Moz)	117.0	122.7	107.8
Global Primary Production (Moz)	195.2	212.7	223.4

Source: GFMS

Favorable by-product metal credits are the main reason that silver cash costs have, in recent years, remained far below the marginal cost of production, despite a general trend of input cost inflation. In 2010 the simple margin, of price minus cash costs, was $14.92/oz based on annual average prices, but given the rapidly rising silver price, this had expanded to $21.46/oz by the fourth quarter.

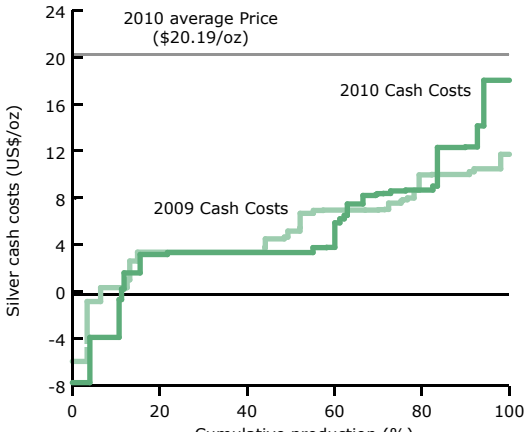
Focusing further on the inflationary pressures faced by producers, exchange rate changes throughout 2010 served to inflate US$ denominated components of cash costs. Two of the most influential currencies, the Mexican peso and the Peruvian sol, both strengthened by 6%, basis the annual average. In the case of the Mexican peso, this was from a weak base; it had weakened notably in the fourth quarter of 2008 to a trough in the first quarter of 2009. The low in the Peruvian sol in 2009 was less pronounced, but it nonetheless steadily strengthened through 2010. Input costs played an underlying role with, for example, electricity rate rises in Mexico. Another notable input cost rise was the price of diesel, cited by many primary silver companies, with annual average WTI oil prices increasing by 28% from 2009. Over the year, the trend was one of rising oil prices, a continuation of the pattern seen in 2009.

Historical Silver Cash Costs



Source: GFMS

Silver Mine Cash Costs



Source: GFMS

Producer Hedging

• ***In a reversal of the recent trend, producers were net hedgers of silver in 2010, accounting for an additional 61.1 Moz (1,901 t) of supply.***

Last year saw a dramatic return to net producer hedging, with 61.1 Moz (1,901 t) added to the global hedge book, a volume just short of the 1997 record high, lifting the global hedge book at year-end to 86.7 Moz (2,698 t). This reversal in trend occurred towards the end of the year, brought about by several producers moving to lock in elevated silver prices against part of their future production. On the other hand, there was relatively little de-hedging activity to offset this, owing to the previous four years of de-hedging, which had reduced the outstanding book at end 2009 to a two-decade low.

The most significant activity last year came from the diversified producer, Minera Frisco, which made multiple additions to its book in 2010, covering silver, gold and base metal production. By mid-year, the volume of outstanding silver forward contracts had risen to 19.2 Moz (596 t). In October, Frisco announced that it had hedged 26% of its forecast silver production out to 2013; a strategy emplaced to protect capital investments made at a number of the company's operating mines and development projects.

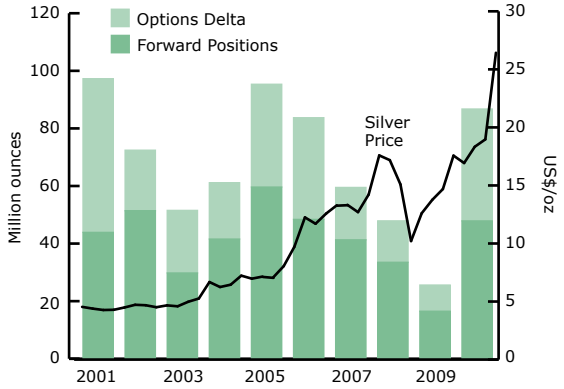
At end-2010, GFMS calculates that Frisco's hedge position totaled 50.3 Moz (1,564 t) on a delta-adjusted basis, with 24.8 Moz (773 t) of forwards, and the balance comprised of options with a floor of $21.79/oz and an upside cap of $39.70/oz.

Another significant hedge was undertaken by Barrick Gold, which took advantage of the high fourth quarter spot silver price to safeguard the economics of its Pascua-Lama project, which is currently under construction. A collar option structure was established, covering 15.0 Moz (467 t) of production, maturing between 2013 to 2017, with a floor price of $20/oz and an average ceiling price of $55/oz.

In addition to the previously discussed Minera Frisco activity, other forward sales came from Minera Volcan, which added 10.4 Moz (323 t), at an average price of $29.35/oz. Bass Metals and Jabiru Metals also added notional volumes of fresh silver hedging, while Perilya took advantage of strong mid-year price gains to supplement its existing hedge position.

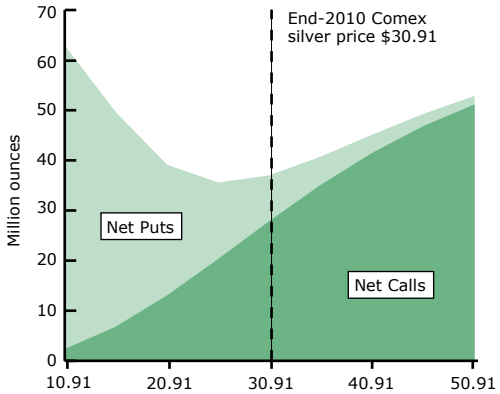
GFMS use Brady plc's Trinity™ trading and risk management system as an integral tool for the valuation and analysis of producers' options hedging exposure and sensitivity. The chart below models the sensitivity of the silver options book at end-2010 under different theoretical price scenarios. As is evident, the hedge book is relatively insensitive to small changes in price; a function of the price structure of many of the collar contracts that were established last year. Producers that have used put and call option hedging typically did so with a wide separation between the put and call strike prices, allowing some price upside participation, with the put options moving into the money at prices around $20/oz. Many of these contracts were set up when the silver price was lower than at end-2010, and so the call option exposure was greater than the put option exposure at year-end.

Producer Hedging: Outstanding Positions



Source: GFMS

Sensitivity of the Options Book



Source: GFMS; Brady plc

5. Supply from Above-Ground Stocks

- ***Net supply from above-ground stocks more than doubled to 142.9 Moz (4,444 t) in 2010.***

- ***The jump was driven by higher silver scrap supply, a considerable rise in net government stock sales and a shift of net producer hedging to the supply side.***

- ***Net government sales increased by a massive 188% to 44.8 Moz (1,393 t), albeit from a low base, primarily the result of a rebound in disposals from Russia.***

- ***Scrap rose by 14%, as gains in industrial and jewelry recycling exceeded the ongoing decline in recovery from photographic sources.***

Net Silver Supply © GFMS Ltd / The Silver Institute

(Million ounces)

	2009	2010
Implied Net Disinvestment	-120.7	-178.0
Net Producer Hedging	-22.3	61.1
Net Government Sales	15.5	44.8
Sub-total Bullion	-127.5	-72.1
Old Silver Scrap	188.4	215.0
Total from Above-Ground Stocks	**60.9**	**142.9**
Mine Production	**718.3**	**735.9**
Total Net Supply	**779.2**	**878.8**

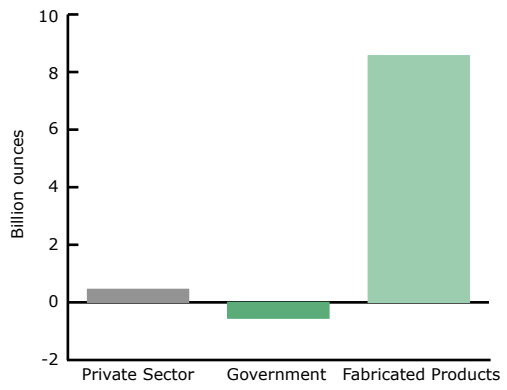
Note: In contrast to Table 1 on page 8, total supply is presented on a net basis in the table above. This provides a measure of the drain on existing above-ground stocks of metal that was required to fill the gap between mine production and fabrication demand.

Overview

The supply of silver to the market can be divided into two categories, namely flows from new mine production and flows from above-ground stocks. The latter can either be sourced from the recycling of fabricated products or from the mobilization of bullion stocks owned by private individuals or by governments.

The accompanying table features the net contribution to supply from its various components. As the appended note points out, this approach differs from the way this information is presented in Table 1 on page 8 (where figures appear on either the supply or demand side). This is done in order to provide readers with a measure of the net drain on above-ground stocks (in both fabricated and bullion form) required to plug the fundamental deficit that for yet another year appeared between mine supply and fabrication demand. Additionally, this approach allows us to compare the contribution from net supply from above-ground stocks with that of mine production.

Changes in Above-ground Stocks (2001-2010)



Source: GFMS

Under this methodology, mine supply, at 735.9 Moz (22,889 t), accounted for 84% of total net supply last year. (Note that using the approach featured in Table 1, mine supply accounted for 70% of total supply.) The source for the remaining 142.9 Moz (4,444 t) of metal supplied to the market in 2010 was recycled above-ground stocks of silver which, in turn, were split between old scrap supply, net government sales, net producer hedging and implied net disinvestment (the latter again being negative).

As for net government sales, its total is estimated to have increased substantially by over 29 Moz (910 t) to a four-year high of 44.8 Moz (1,393 t) in 2010, almost exclusively due to considerably higher selling from Russia. Elsewhere, disposals remained subdued, as China and India were once again absent from the market. However, the share of supply accounted for by this source remained low at just above 4% of total supply last year.

Unlike gold, where the bulk of liquidity for the lending market is provided by central banks, the metal used to fund producers' activities in the silver forward and

derivatives market is largely sourced from privately held stocks of bullion. By implication, therefore, the 61.1 Moz (1,901 t) net increase in the producer hedgebook is understood to have also been reflected in a drop in private stocks of silver.

Combined with the 178.0 Moz (5,537 t) implied net investment figure derived for the year, this suggests that privately held stocks of silver bullion rose by a total of 116.9 Moz (3,636 t). (Note that this analysis excludes newly minted bullion coins, which are discussed in a separate section in Chapter 3.) Taking the 44.8 Moz (1,393 t) net fall in government owned stocks into consideration, above-ground bullion stocks increased by 72.1 Moz (2,243 t) over the course of 2010. In other words, private individuals and governments combined demanded rather than supplied silver bullion on a net basis in 2010.

The largest contribution to supply from above-ground stocks has been from the recycling of fabricated products. Despite a substantial increase in silver prices over the last decade, scrap supply remained relatively flat over most of the period, with its total actually falling between 2006 and 2009. Behind this apparent conundrum is the fact that most sources of recycled silver are a good deal less price sensitive than those, for example, for gold.

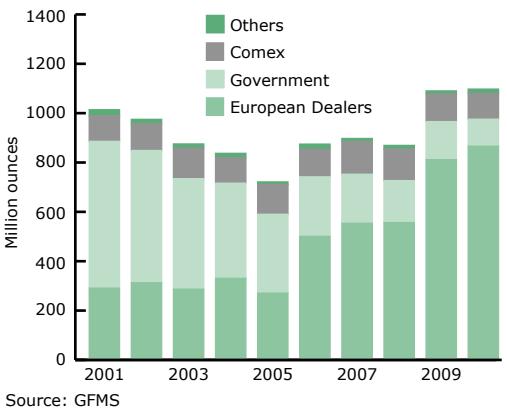
In gold's case, the bulk of fabricated products are in the form of jewelry, scrap from which is highly price sensitive due to the metal content accounting for a very high portion of the finished product's value. Silver-bearing finished products, on the other hand, with a few exceptions, tend to have a low contained metal value. As such, silver scrap tends to be relatively inelastic to price levels and volatility, and is mostly driven by the performance of the relevant sector (taking into account any appropriate lags) as well as environmental legislation. Last year, however, after four consecutive years of decline, silver scrap supply rebounded by 14% to a new record of 215.0 Moz (6,687 t). The increase is mainly due to a jump in industrial scrap recycling, due to tighter environmental regulation and a growing pool of above-ground product, although growth in jewelry recycling is also important to the outcome. Meanwhile, photographic scrap continued to decline, mainly as a result of the ongoing decline in photographic fabrication demand.

Identifiable Bullion Stocks

GFMS' analysis of identifiable bullion stocks includes inventories for which sufficient evidence is available to form a statistical picture. In contrast, silver bullion held in depositories on which information is not available, as well as in private individuals' vaults, is excluded from our figures. Besides suggesting the existence of additional stocks of silver, this caveat has implications for the interpretation of changes in our estimates of identifiable bullion stocks. Specifically, in addition to such changes being driven by the absorption of surpluses or the filling of deficits, they could in theory be explained by metal flowing out of unidentifiable stocks and into identifiable ones or vice versa.

As illustrated in the table on the next page, in total, identifiable bullion stocks continued to grow last year,

Identifiable Bullion Stocks



Source: GFMS

Bullion Stocks in Dealers' Vaults in Europe

Source: GFMS

Identifiable Bullion Stocks

(Million ounces)

	end-2009	end-2010
European Dealers	811.2	866.0
Comex	112.4	104.5
Government	154.4	109.6
Other Stocks	12.1	17.3
Total	**1,090.2**	**1,097.4**

Source: GFMS

Comex Silver Stocks

(Million ounces; end period)

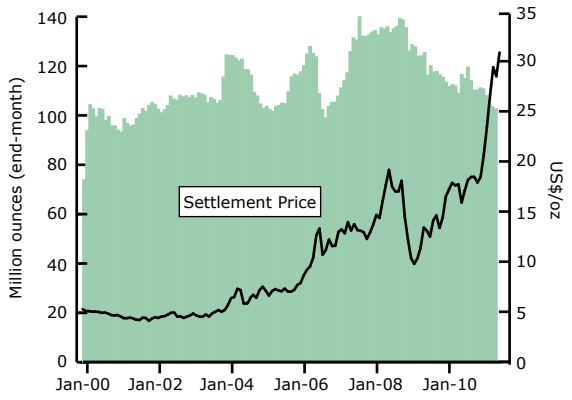
	Q1	Q2	Q3	Q4
2007	125.8	139.9	132.6	132.6
2008	135.9	136.0	135.5	127.7
2009	125.4	117.6	115.4	112.4
2010	116.6	114.0	111.1	104.5

Source: Comex

with its total amounting to 1,097.4 Moz (34,134 t) at end-2010, up marginally year-on-year and the highest figure since 1999. It is of note that the 7.2 Moz (224 t) increase last year seems to be far smaller than the 72.1 Moz (2,243 t) inflow implied by the difference between implied net investment and the sum of net producer hedging and net government sales over the year. Central to this is implied net investment data which aggregates investor activity in all areas. As such, a good part of the 64.9 Moz (2,019 t) difference between the two is likely to have been related to buoyant physical investment over 2010, as some of the bullion that was released from identifiable sources was moved to non-identifiable stocks held by private individuals and non-reporting institutions.

Moving to the breakdown of identifiable bullion stocks at year-end, the increase last year was almost exclusively driven by another hefty rise in European dealers' inventories. A smaller, albeit healthy, 5.2 Moz (160 t) increase was also recorded in other stocks (predominantly held by the Japanese trade). These increases were partly offset by the 44.8 Moz (1,393 t) decline in government owned silver and a modest drop in Comex stocks.

Comex Warehouse Stocks



Source: Comex

European Dealers' Stocks

Since 1996, GFMS have conducted a confidential survey of bullion stocks held in European dealers' vaults and have reported an aggregate end-year total for these in the *World Silver Survey*. At the end of 2010, European dealers' silver stocks had increased by 7% or 54.7 Moz (1,703 t) from their end-2009 level. At 866.0 Moz (26,935 t), the combined total was the highest figure in GFMS' 15-year series.

The largest contributor to higher stocks last year was continued robust inflows into silver ETFs (discussed in the relevant focus box in Chapter 3). Further growth came from a small rise in allocated accounts managed by banks during 2010 (a precise breakdown of European dealers' stocks cannot be provided in respect of confidentiality).

Nevertheless, it is of note that the increase in stocks held by European dealers would be greater were it not for other factors. For example, part of the rise was offset by a recovery in bullion exports from the United Kingdom to India, due to higher investment demand. In addition, the return of net producer hedging last seen in 2005 would have led to a decline in dealers' stocks. Finally, the strong recovery in fabrication demand would have seen an increased amount of metal mobilized for lending.

Comex Stocks

Stocks held at Comex depositories continued at low levels over the course of last year. At end-2010, total stocks stood at 104.5 Moz (3,252 t), down by 7.9 Moz (246 t) year-on-year.

The fall may have been partly driven by a robust rebound in industrial demand for silver within the United States after offtake fell heavily in 2009, due to the recession.

Deficits and Surpluses in the Silver Market

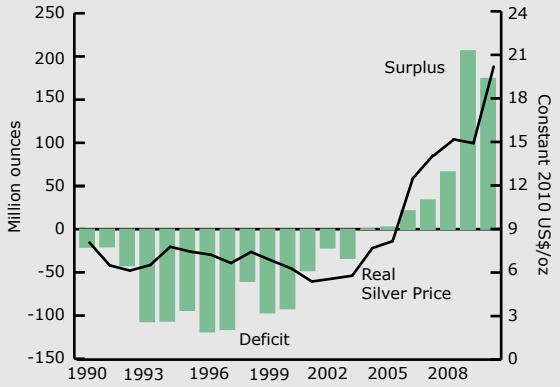
From 1990 to 2003, the silver market saw a series of massive market deficits - defined as the difference between supply from mine production plus scrap and demand from fabrication (note that for this analysis, fabrication should exclude coin minting, which instead is treated as new bullion demand). Over the period, the gap was primarily filled by mobilization of above-ground bullion stocks held by private investors and governments.

Since 2004, however, the picture changed dramatically, with a market surplus first appearing that year and then growing to 206.5 Moz (6,423 t) in 2009. Despite a fall of 12% last year, the market surplus of 173.4 Moz (5,394 t) was still very high by historical standards. Since net government stocks sales continued to take place over the last few years, almost all these market surpluses have been comfortably purchased by investors, who drove the silver price to a 30-year high in late 2010.

Behind this shift since the middle part of the 2000s is growing investment demand for precious metals, with silver finding tremendous support from a spill over from the gold market. Furthermore, there has been a general rise in investor interest in the broader commodities complex (notwithstanding the massive sell-off in the second half of 2008), largely on the back of a weak dollar over the period. Meanwhile, the availability of silver ETFs is certainly thought to have facilitated the process, by expanding the metal's investor base. Lastly, silver's historically high volatility in a far less liquid market also has recommended it to those more speculative investors.

Looking more closely at developments last year, it is of note that the remarkable silver rally was primarily driven by a surge in investment. This is because the economic backdrop remained positive for investment demand for precious metals as safe haven assets, in the light of negative real interest rates, the European sovereign debt crisis and the growing danger of high inflation in the future. Some investors were also well aware of silver's robust fundamentals as industrial demand rebounded.

Silver Deficits and Surpluses



Source: GFMS

Turning to changes in individual depositories' stocks, the decline was mainly driven by falls in the HSBC Bank United States vault, and to a lesser extent Scotia Mocatta, which overshadowed gains elsewhere including a notable year-on-year rise for Delaware and Brinks.

Government Stocks

GFMS estimate that total government silver stocks stood at 109.6 Moz (3,410 t) at the end of 2010. It is important to point out that our estimate of outstanding holdings is probably a conservative figure and has been revised upwards in the light of substantial sales last year. This is because there is very little published data on official holdings of silver bullion. As such, our estimates of levels of government-owned stocks (as well as changes in such stocks) are almost exclusively based on proprietary information collected through field research. Nevertheless, we are far more confident when it comes to measuring the annual changes in stocks, as shown in our government sales data.

At present, we estimate that net government sales came to 44.8 Moz (1,393 t) in 2010. Not only is this the highest level since 2007, but it is also 188% higher than the revised figure for 2009. The higher number recorded last year was almost entirely driven by a major increase in sales from one country, namely Russia, which accounted for more than 95% of total sales. In addition, a small contribution was made by an increase in disposals of old coin stocks by a handful of countries.

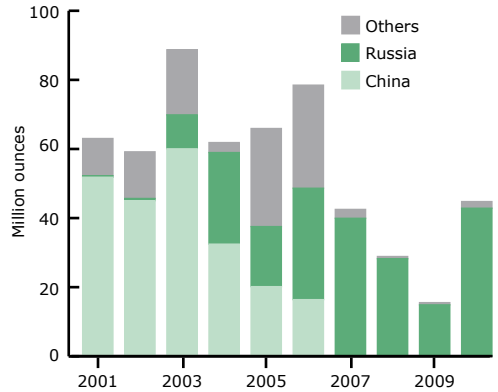
Based on a careful analysis of the Russian silver supply/demand equation as well as information collected from various sources, our current estimate suggests that the country may have sold nearly 43 Moz (1,330 t) of government owned silver in 2010, almost three times the 2009 figure. In our view, the silver price has been an important factor when it comes to Russian government stock sales; it is no coincidence that supply from this source surged last year on the back of rising silver prices.

Finally, looking at China and India, once again, both countries were absent from the market last year. As far as China is concerned, it is our understanding that, following several years of heavy sales, its silver stocks have already been reduced significantly from "excessive" levels, and remaining stocks will play some small part in diversifying its reserves portfolio away from US dollars.

Other Stocks

In addition to the above-mentioned stocks, GFMS also track those registered on the Tokyo Commodities Exchange, the CME Group (previously the Chicago Board of Trade) and Japanese trade stocks, as reported by the country's Ministry of Trade and Industry. Due to their only accounting for a small fraction of the overall figure, we have aggregated these under the "Other Stocks" category in the chart on page 36 and the table on page 37. At end-2010, these stocks had risen by 5.2 Moz (160 t) year-on-year to 17.3 Moz (538 t).

Net Government Stocks Sales



Source: GFMS

Scrap

• ***High prices in 2010 fed through to a 14% surge in scrap to the highest level on record, despite the ongoing slide in receipts from photography.***

Scrap supply in 2010 reversed three consecutive years of losses as it registered a 14% increase to 215.0 Moz (6,687 t), the highest ever seen basis our records. Even with this robust gain, however, its share of total supply continued to fall, reaching 20.3% compared to 20.4% in 2009, due to last year's jump in producer hedging and government sales. It is of note that both this share and the absolute level have shown little trend over the last decade, with volumes from 2001 to 2008 always higher than the 2009 trough but lower than the 2010 peak.

The fact that scrap has trended broadly sideways over much of the past decade despite rising prices is largely due to structurally declining photographic scrap. In the last few years (2010 was no exception), losses were most noticeable in the field of recovery from liquids. Much of this is recycled fairly soon after use and these flows are largely price insensitive. In contrast, recovery from film, typically X-rays often many years old, can respond to the price as collectors become more assiduous. As a result, this area of scrap scarcely showed any decline last year and in some countries actually rose.

Much of the rise in scrap last year was due to a higher recovery from industrial sources. This has been rising over time due to tighter environmental legislation and a growing pool of above-ground product. However, we believe higher prices also played a role as they encouraged greater adherence to waste regulations and as they made economic some more marginal areas of recovery. Some of these might strictly be viewed as process scrap rather than old scrap, which should therefore be excluded from our series. However, in the industrial field, such distinctions are not watertight and the extra silver recovered in the year in which higher prices make viable a new field of recycling should arguably be recorded to avoid the change being ignored.

The more observant reader might also have noticed that our figures for prior years have been raised and this largely stems from our reappraisal of industrial scrap, particularly in China. We should caution, however, that our overall industrial scrap figures might still

remain conservative. A key reason for this and earlier undercounting is the opacity of industrial scrap. This stems from a variety of factors, perhaps most important of which is the huge variety of end-uses, most of which would entail different methods, location and efficiency of recycling. Furthermore and in contrast to high yield areas like jewelry or silverware, the economics of recovery are varied and change over time. Lastly, reliable or usable trade data on silver scrap is almost non-existent.

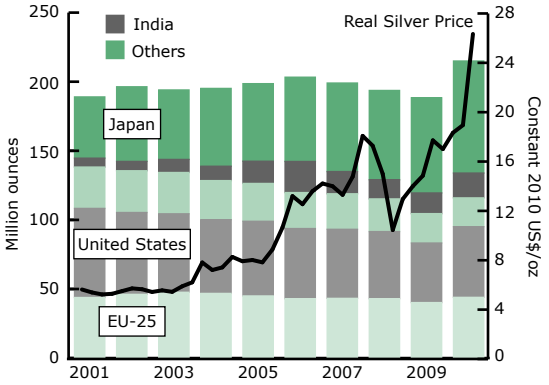
The remaining silver scrap concerns high grade supplies coming from jewelry, silverware and coin (where best classed as scrap rather than disinvestment or government sales). There was certainly notable growth in jewelry scrap last year, mainly in emerging markets such as India, where consumers reacted to rising prices. In contrast, the rise in volumes from the industrialized world was less marked as the absolute scale of the financial reward was rarely sufficient either to prompt many consumers to sell dated pieces or for collectors to seek these out. Silverware scrap also grew last year and again mainly in the developing world, in particular India.

The increase in scrap that India saw last year, however, was eclipsed by that for China and yet more so the United States. The other major increases enjoyed at a country level related to Germany and Russia. Losses, in contrast, were few, with the United Kingdom, Japan and Turkey being the only countries of any scale to register a year-on-year decline. As a consequence, the total figures for all regions saw increases in scrap last year.

Total **European** scrap, for instance, rose by 9% to 44.5 Moz (1,385 t), a development that ended six years of losses. This turnaround had much to do with the price as it encouraged recycling in many segments.

Photographic scrap for example was essentially flat year-on-year as the drop in recovery from liquids was countered by a surge in receipts from film, which on occasion left refiners struggling to cope, as collectors and medical facilities rushed to exploit elevated prices. This led to the emergence of X-rays held longer than their statutory requirements and this is significant as older films tend to have higher silver yields. Despite that, average yields fell as more modern X-rays were processed and this trend should accelerate as the even lower yielding dry-view X-rays become proportionately more important within photographic scrap.

World Scrap Supply



Source: GFMS

Industrial scrap in contrast is thought to have risen noticeably and growth here is a key for the strong gains in Germany. This was partly achieved through higher volumes of electronic scrap as processing capacities have grown, while the recovery from low margin areas rose, often as higher silver prices encouraged the start of new forms of recovery. Two (admittedly niche) examples of this were the recovery of silver from plated cutlery, rather than seeing the metal lost to the steel stream, and the refining of ash from burnt cleaning tissues from photo-voltaic plants, which previously were merely discarded.

Jewelry scrap also rose, although by far less for gold jewelry, due to low incentives for individuals to sell and there being limited trade remelt as consumption has been buoyant. (One should note that gold jewelry is itself a source of silver as the latter usually comprises 4% to 14% of the alloy depending on the carat) Silverware scrap became more noticeable last year for the first time, particularly in Italy, as high prices encouraged the refining of dated pieces, while trade melt also grew due to a stagnant sales environment. Finally, coin scrap was buoyant last year, especially in France.

US scrap supply achieved a five-year high in 2010, of 51.1 Moz (1,590 t), for two main reasons. First, the recovery of silver from spent ethylene oxide (EO) plants rose notably last year, with 2009 having seen a number of catalyst changeouts postponed, itself a response to the global economic downturn. As a result, EO scrap supply last year benefited from both those plants that had been scheduled to close in 2010, together with silver recovered from a number of installations that had been deferred from 2009. Second, US recycling of old jewelry jumped last year. In fact the scrapping of silver jewelry initially

Table 4 - Supply of Silver from the Recycling of Old Scrap (million ounces)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Europe										
Germany	16.8	16.7	19.0	19.2	17.6	15.1	15.1	14.6	12.6	14.9
UK & Ireland	11.1	13.6	13.0	12.4	11.6	10.9	11.2	10.9	10.2	9.6
France	3.9	3.9	4.1	3.8	4.1	4.5	4.6	5.1	5.5	6.2
Italy	3.5	3.6	3.6	3.3	4.3	5.1	5.3	5.6	5.5	6.2
Austria	2.0	1.9	1.5	1.6	1.3	1.3	1.2	1.2	1.1	1.1
Netherlands	1.4	1.4	1.4	1.4	1.4	1.3	1.1	1.1	1.0	1.1
Sweden	1.1	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.8
Spain	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.7
Belgium	0.7	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6
Denmark	0.6	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5
Czech & Slovak Republics	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Portugal	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Finland	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3
Norway	0.7	0.7	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Switzerland	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
Other Countries	1.1	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0
Total Europe	**44.8**	**47.1**	**48.4**	**47.5**	**45.6**	**43.5**	**43.7**	**43.5**	**40.7**	**44.5**
North America										
United States	64.5	59.2	56.8	53.3	54.0	50.8	50.0	48.5	43.1	51.1
Mexico	1.4	1.5	1.8	1.9	2.1	2.3	2.7	3.1	3.2	4.0
Canada	1.4	1.4	1.5	1.4	1.5	1.4	1.6	1.7	1.5	1.6
Total North America	**67.3**	**62.2**	**60.1**	**56.7**	**57.5**	**54.5**	**54.3**	**53.3**	**47.8**	**56.7**
Latin America										
Brazil	1.6	1.0	1.2	1.0	1.0	1.0	1.0	1.0	1.1	1.4
Argentina	0.7	0.6	0.6	0.6	0.6	0.8	0.6	0.5	0.4	0.6
Chile	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6
Other Countries	0.8	0.8	0.8	0.8	0.9	1.1	1.0	1.0	1.0	1.3
Total Latin America	**3.5**	**2.8**	**3.0**	**2.8**	**3.1**	**3.4**	**3.2**	**3.0**	**2.9**	**3.9**
Middle East										
Saudi Arabia	0.8	7.2	0.7	1.3	1.6	1.8	1.9	1.9	1.9	2.2
Egypt	1.1	1.3	1.1	1.4	1.4	1.5	1.5	1.7	1.8	2.0
Turkey	1.3	1.4	1.7	1.5	1.3	1.1	1.0	1.1	1.2	1.1
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	0.3	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.6
Total Middle East	**3.7**	**10.4**	**4.1**	**4.8**	**4.9**	**5.1**	**5.0**	**5.4**	**5.7**	**6.1**
Indian Sub-Continent										
India	6.4	6.8	9.5	10.4	16.1	22.5	16.1	13.8	15.0	17.9
Other Countries	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.8
Total Indian Sub-Cont.	**6.9**	**7.2**	**9.9**	**10.9**	**16.6**	**23.1**	**16.6**	**14.4**	**15.6**	**18.8**
East Asia										
China	9.4	11.8	13.1	15.2	17.5	20.4	22.5	22.7	25.3	29.2
Japan	29.9	30.2	29.9	28.3	27.4	26.0	25.7	23.7	21.3	20.9
South Korea	6.4	6.7	7.1	7.2	7.3	7.7	7.8	7.7	8.4	9.4
Taiwan	2.0	2.3	2.5	2.7	2.7	2.8	2.9	3.1	3.6	4.1
Thailand	1.8	1.9	2.1	2.4	2.2	2.6	2.7	2.9	3.1	3.7
Singapore	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5
Hong Kong	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Indonesia	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4

Table 4 - Supply of Silver from the Recycling of Old Scrap (million ounces) © GFMS/The Silver Institute

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Vietnam	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4
Philippines	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other Countries	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
Total East Asia	**51.2**	**54.7**	**56.4**	**57.7**	**59.0**	**61.7**	**63.8**	**62.2**	**63.7**	**69.6**
Africa										
Morocco	0.5	0.5	0.5	1.3	0.6	0.9	0.9	0.9	1.0	1.0
Other Countries	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Total Africa	**1.1**	**1.0**	**1.1**	**1.8**	**1.2**	**1.5**	**1.5**	**1.5**	**1.6**	**1.7**
Oceania										
Australia	2.4	2.3	2.1	2.0	1.8	1.7	1.7	1.6	1.6	1.6
Total Oceania	**2.4**	**2.3**	**2.1**	**2.0**	**1.8**	**1.7**	**1.7**	**1.6**	**1.6**	**1.6**
CIS										
CIS	8.1	8.5	9.0	10.9	9.0	8.9	9.3	8.7	8.8	12.1
Total CIS	**8.1**	**8.5**	**9.0**	**10.9**	**9.0**	**8.9**	**9.3**	**8.7**	**8.8**	**12.1**
World Total	**189.0**	**196.3**	**194.0**	**195.2**	**198.6**	**203.3**	**199.0**	**193.7**	**188.4**	**215.0**

benefited from the high profile, gold jewelry collection services, which have characterized the US market for several years. The consumer response has not only boosted the scrapping of unwanted gold pieces but has often extended to silver. In addition, last year saw the introduction of advertizing targeting silver jewelry and it was these campaigns that drew such a positive response from US consumers. Together, these two trends last year comfortably offset a further fall in the scrapping of photo-related products, which continued its long-term structural decline in the United States.

Silver recycling in **India** rose by 20% to 17.9 Moz (558 t) in 2010. The increase was chiefly due to the surge in scrapping of jewelry and silverware by consumers, with the bulk of it coming from the latter source. Once again, the rise in the rupee silver price, which rose by 34% basis annual averages last year, was the key driver.

Local refineries noted substantial inflows of scrap particularly after crucial price points were breached, with volumes subsiding in the interim. Consequentially, much of the recycling activity was concentrated in the latter part of the year as the rupee price saw multiple highs. Given that jewelry and silverware fabrication was extremely poor during this period, much of the scrap generated was used to service rising investment demand. (For more on investment and fabrication demand refer to Chapters 3 and 7 respectively.) Having said that, historically last year's scrap volume was still way below the 2006 peak, despite the rupee price having risen by over 80% since then. GFMS analysis of the Indian market has shown that as the price continues to rise, future price expectations are adjusted higher, thus discouraging selling back.

Last year, recycling in East Asia (excluding Japan) reached a new record, jumping 15% to a combined total of 48.8 Moz (1,516 t). Several countries saw hefty gains, as sharply higher silver prices and a healthy rise in industrial output boosted scrap receipts. The largest annual increase in the region was recorded in **Thailand** where higher silver prices precipitated a rush to recycle both jewelry and silverware, the latter boosted by increased inventory remelt from the supply chain. Moreover, a 16% rise in **Chinese** scrap was a function of increased processing of photographic fluid (mainly from consumer films) as higher prices bolstered refining output. Elsewhere, **Taiwan** and **South Korea** also recorded double digit rises, assisted primarily by the treatment of electronic scrap and photographic film.

In **Japan**, recycling fell marginally last year to 20.9 Moz (649 t). This was driven by the ongoing decline in photographic supplies, notably from consumer film. In contrast, silver recovered from old X-rays remained stable. This was largely due to the fact that its availability is dependent on the release of conventional X-rays by the medical sector, which is legislated to hold stocks for a given period of time, which ensures a relatively steady supply. Electronics scrap also fell last year, although volumes in 2009 had been inflated by inventory stock releases, in response to the downturn in consumer demand.

6. Silver Bullion Trade

- ***The 14% decline in UK imports last year was principally due to lower deliveries from Japan and Germany, in part because of firmer industrial demand in each market.***

- ***In contrast, UK bullion exports in 2010 more than doubled, led by higher flows to India and North America, with strength in the US physical market explaining much of the latter's growth.***

- ***Indian bullion imports surged by 136% in 2010. Inflows were concentrated in the first and last quarters, with the former driven by weaker prices and the latter by strong investment demand.***

- ***Bullion imports into China, Hong Kong and Singapore fell last year, while South Korean and Japanese inflows grew markedly due to the recovery in industrial offtake.***

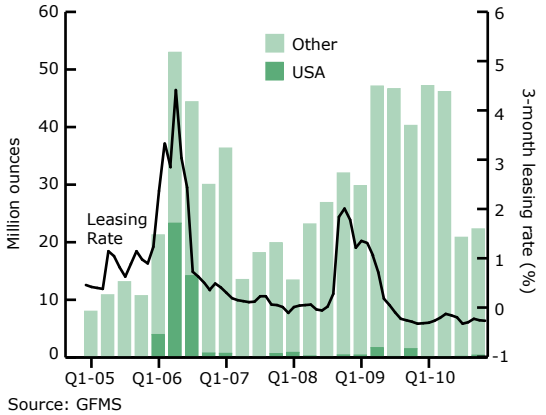
Europe

Europe is one of the principal structural deficit regions as regards silver, with its 2010 fabrication of 157.5 Moz (4,899 t) being comfortably in excess of supply that year from scrap at 44.5 Moz (1,385 t) and mine production at 48.9 Moz (1,521 t). The resultant gap therefore explains the heavy imports of concentrates, doré, refined bullion and scrap. Most of the mine supply and high grade scrap arrives in Switzerland, destined for some of the world's largest refineries. Much of the refined metal, however, is shipped first to the United Kingdom as home to the London terminal market. Substantial stocks in the latter and also in the Zurich market mean that Europe also typically features as a major exporter of bullion, despite being a deficit area. The only other European countries to see sizeable bullion movements are Germany and Italy, although much of these are merely intra-European flows.

A key change as regards European bullion flows in 2010 was the marked 14% drop in **UK** imports to 142.5 Moz (4,432 t). A key reason for the fall is suggested by the largest single drop being the 67% slump in receipts from Japan; as fabrication demand there and in most other countries recovered last year from the 2009 trough, the need for heavy bullion shipments to the London terminal market faded. However, the absolute level of UK bullion imports remained high; the average annual inflow from 2000-08 (excluding the anomalous 2006) stands at just over 70 Moz (2,200 t). Undoubtedly, an important explanation for still high imports is buoyant investment, a fair portion of which would involve loco-London bullion. Surging government sales and scrap supply might also well need to find an immediate home, even if such bullion were ultimately to find its way to end-use fabricators.

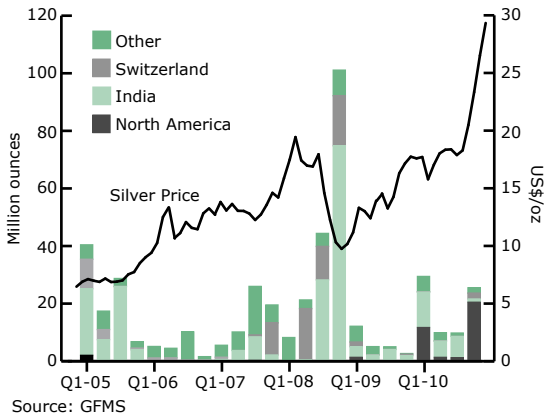
Changing fabrication levels were also integral to UK bullion exports as they roughly tripled last year to 77.7 Moz (2,418 t). This is strongly implied by the 34.2 Moz (1,065 t) jump in shipments to North America (some initially landed in Canada but were then re-exported to the United States). Outflows to India were also robust,

UK Bullion Imports



Source: GFMS

UK Bullion Exports



Source: GFMS

more than doubling to a reported 28.3 Moz (879 t) as its fabrication recovered and as its market swung from disinvestment to investment. Our separate analysis of flows into India, however, suggests that these exports were notably larger, at around 39 Moz (1,200 t). Investment in India last year, however, remained sharply down on its 2008 record, a year that saw UK exports to that country reach 116.8 Moz (3,633 t). This largely explains why total UK exports in 2010 were notably lower than 2008's 185.4 Moz (5,765 t).

Silver bullion exports as reported by destination from **Switzerland** also rose sharply last year, up by a little over 60% to roughly 40 Moz (1,250 t), although our analysis of possibly missing flows suggests that figure might be a little light. Much of the increase again relates to higher flows to India as its bullion import needs returned to more 'normal' levels, having been depressed by 2009's heavy disinvestment. Other countries often saw an uplift stemming more directly from higher fabrication. One such example was the 3.3 Moz (102 t) jump in Hong Kong's imports from Switzerland, in part reflecting Chinese offtake gains.

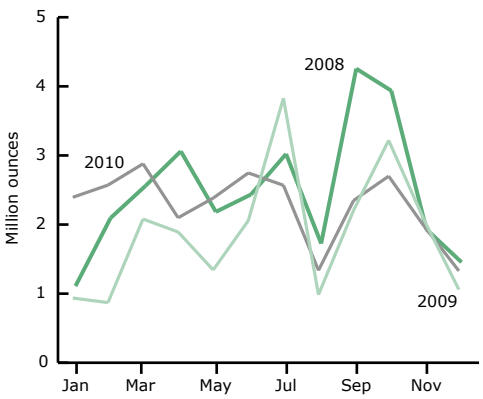
Swiss bullion imports as reported by origin suggest a drop of 10% or so in 2010 to around 45 Moz (1,400 t). Once again, our analysis of possibly missing shipments suggests the real figure would have been slightly higher (Russian exports for example do not appear in a derived report) and also that the year-on-year fall was a little steeper. Much of the decline was due to lower inflows from a range of countries, including Turkey, Hong Kong, Italy and Sweden. These easily countered higher receipts from other countries, principally Germany and Mexico.

Official bullion imports into **Italy** last year were a poor guide to its fabrication as the former's jump of 16% to 27.4 Moz (853 t) bore little relation to the 2% rise in offtake. *Net* imports were no help either as these grew by 18%, while both domestic and imported scrap rose notably. Unofficial imports at least remained slight. One explanation for this mismatch includes timing as the resultant apparent internal surplus in 2010 was not dissimilar to the apparent deficit in 2009. A second is a surge in exports of semi-manufactured silver products. Importantly, industry contacts in Italy and the main destinations (Germany, France and Spain) do not feel these flows related to truly 'fabricated' items. It is not fully clear what they did involve but it is possible they largely comprised some sort of VAT carousel trade.

Official **German** data for 2010 shows a leap in silver bullion imports of 51% to 29.1 Moz (905 t). This marked apparent rise is, however, thought to mainly reflect heavy undercounting in 2009. Indeed, if reviewed on the basis of silver bullion exports to Germany as reported (or estimated) by origin, growth in exports was at a more modest rate of 16%, but to a far higher total of around 65 Moz (2,000 t). Similar discrepancies affect German bullion exports; the official data claims a rise of 17% in 2010 to 47.4 Moz (1,474 t) but inflows from Germany as reported by destination on a calculated basis suggest a rise of around 10% to just over 58 Moz (1,800 t).

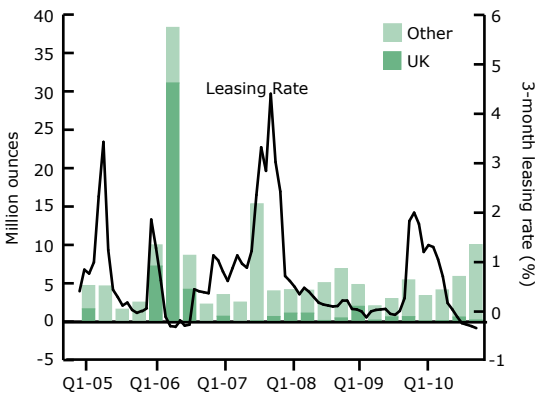
Exports from the **Commonwealth of Independent States** (CIS) increased substantially last year, driven by a jump in shipments from Russia. Russia is an important surplus producer of silver, with local mine production and scrap volumes comfortably exceeding local demand.

Official Italian Bullion Imports



Source: GFMS

US Bullion Exports



Source: GFMS

However, the particularly large scale of its deliveries in 2010, especially to the United Kingdom, is highly suggestive of a ramping up of government sales from this country.

The Americas

Last year **US** bullion imports surged by close to 60% to 182.7 Moz (5,682 t), their highest level in at least 21 years (the import series dates from 1990). This performance was in part due to significant growth in the country's silver industrial and investment markets. However, what does not immediately stand out from the data is the scarcity of bullion which at times affected the market. In particular, shortages emerged of four 9s or three 9s5 material that also met low impurity thresholds (particularly in terms of their bismuth and lead content and especially for the needs of the electrical and electronics industries). As a result, premiums on these higher grade bars surged, especially during the second half of the year, from less than a typical two cents per troy ounce, to comfortably, at times, over ten cents.

Part of the challenge in sourcing high-grade bullion in the United States followed the near cessation of deliveries from **Peru**, in the wake of the closure of the Doe Run La Oroya lead/zinc smelter. Even though this was shut in 2009, material continued to flow into the United States, although the 2010 total, at 2.7 Moz (80 t), paled against the 20.7 Moz (262 t) delivered just two years before. In contrast, US imports from both Mexico and Canada in 2010 were noticeably higher. In terms of **Mexico**, the one-third rise (to 89.3 Moz or 2,786 t) was due to a full year of production at Industrias Peñoles' Met-Mex lead-silver refinery, following a strike there in early 2009.

With regards to **Canada**, US statistics show deliveries south of the border more than doubled to 54.3 Moz (1,690 t) in 2010. It seems as though part of the rise was due to higher Canadian imports from western Europe, including those from the United Kingdom, which were re-routed south (a product it appears of lower Canadian landing charges). In fact the United Kingdom also saw its direct shipments to the United States surge last year, with combined exports to the United States and Canada reaching 35.7 Moz (1,111 t), compared with just 0.2 Moz (6 t) the year before. The one-off nature of this trade reflected, at times, the "scramble" for silver in the United States. This also explains the emergence of a number of other relatively new sources of silver bullion for the US market, including Poland and Japan, which together contributed 11.2 Moz (347 t) in 2010.

As a postscript, the lack of readily available silver has carried over into early 2011, although three 9s silver has also benefited from notably higher premiums. The strength of the US physical market was reflected not only in January shipments of 19.3 Moz (600 t), which were 55% higher year-on-year, but also the growing range of import origins, including South Korea and Germany.

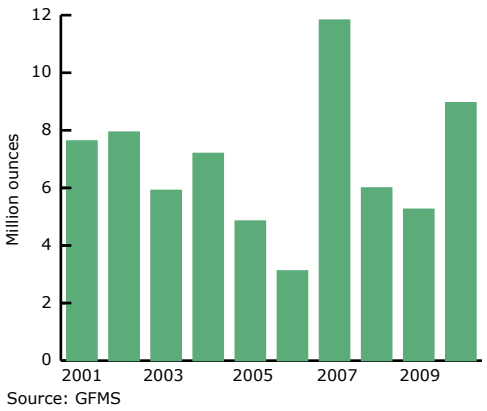
Middle East and Indian Sub-Continent

Last year, **Turkish** silver bullion imports edged higher to 0.6 Moz (20 t). Although this represented a more than two-fold increase from 2009, imports over the past two years have remained at a historically low level, with rising levels of domestic mine production more than sufficient to satisfy local fabrication demand. In fact, a jump in Turkish mine production in 2009 (with 2010 seeing a further, albeit modest rise) generated a substantial excess quantity of bullion in the local market, much of which was exported, with Switzerland and India last year the major recipients of this material.

2010 saw virtually no change in the delivery of bullion into the **Egyptian** market. This was largely because scrap supply remained sufficiently high to meet the requirements of the depressed jewelry and silverware markets, with the 21% import duty further discouraging official flows into the country. Shipments of both official and unofficial bullion therefore remained at paltry levels.

Silver bullion imports into the **United Arab Emirates** (UAE) recorded a significant rise last year as increased

Dubai Bullion Imports



Source: GFMS

demand from India saw several banks and traders using Dubai as a regional entrepôt to replenish this key market. Imports from Switzerland and the United Kingdom accounted for much of the rise and offset a drop in supply from Russia and Hong Kong, with the latter effectively ending as bullion was shipped directly to India rather than being trans-shipped via or temporarily vaulted in Dubai.

Indian bullion imports rose sharply last year to 97.4 Moz (3,030 t), up 136% year-on-year. However, the rise is exaggerated due to the comparison with 2009's historically low level of imports; ample local supply through dishoarding mitigated the need for imported metal in that year. In 2010, imports accounted for nearly 80% of total supply, while domestic mine production, recovery from imported concentrates and scrap made up the balance.

Shipments from all the key suppliers were up sharply, with those from the United Kingdom, Hong Kong, Switzerland and Dubai accounting for over 90% of total Indian imports. GFMS estimate that UK deliveries roughly tripled to around 39 Moz (1,200 t), which accounted for 40% of total imports. Hong Kong shipments of 27 Moz (846 t) were more than two-thirds higher and equal to nearly 30% of total imports. Swiss shipments of around 14 Moz (430 t) were dramatically higher, albeit from a low base in 2009, gaining a 14% share of India's imports. Dubai exported roughly 10 Moz (314 t), up 132%. Receipts from the United States were up two-thirds to 0.8 Moz (26 t), while Turkey and South Africa emerged as new suppliers exporting 1.8 Moz (55 t) and 0.9 Moz (27 t) respectively. However, imports from China and Singapore, of around 1 Moz (40 t) each, were down by 54% and 31% respectively. It should be noted that these

Indian Bullion Imports

Moz	2006	2007	2008	2009	2010
OGL^	16.1	78.9	160.3	40.1	95.7
Others**	1.0	1.2	2.0	1.2	1.8
Total Imports	**17.1**	**80.0**	**162.3**	**41.3**	**97.4**
Local Premium*	4%	6%	5%	5%	8%

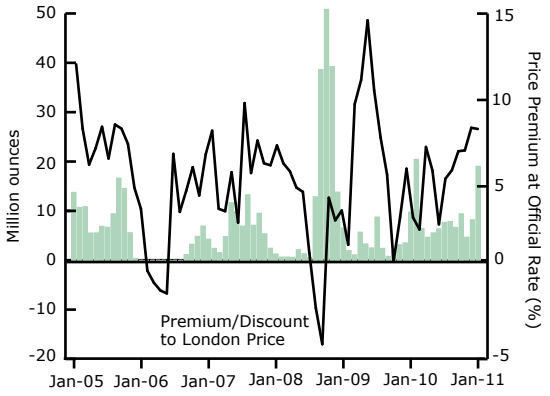
^Open general licence
* average percentage above London price at the official exchange rate (excluding all local duties and taxes)
** includes Direct Imports, Non-Resident Indians, Special Import Licence, and Replenishment Imports (i.e. imports of silver bullion for manufacture and re-export).
Source: GFMS

are proprietary GFMS estimates of imports into India last year and that these figures do in some circumstances differ markedly from the official trade data.

In India, Ahmedabad and Chennai remained the main ports of entry, followed by New Delhi, Agra, Bangalore and Kolkata. Ahmedabad has an advantage over Mumbai where an octroi levy discourages direct shipments, while Chennai is the closest port to the major manufacturing hubs. The bulk of the imports were still in the form of London Good Delivery bars, but there was some shift to grain. Bullion dealers mentioned that they preferred grain as it was easy to handle and the premiums charged by suppliers were the same as on bars.

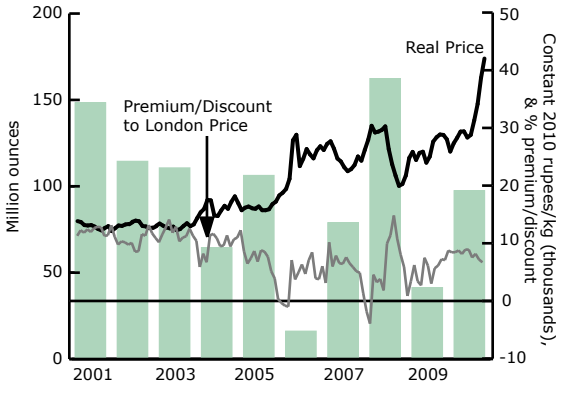
Monthly imports in 2010 were less volatile than in previous years, although there were notable fluctuations, particularly in the earlier and later months of the year, mainly due to price movements. February imports doubled to over 20 Moz (630 t) from around 10 Moz (300 t) in January before tumbling to just over 6 Moz (200 t) in March. The rise in imports in February

Gross Monthly Indian Bullion Imports



Source: GFMS

Indian Bullion Imports



Source: GFMS

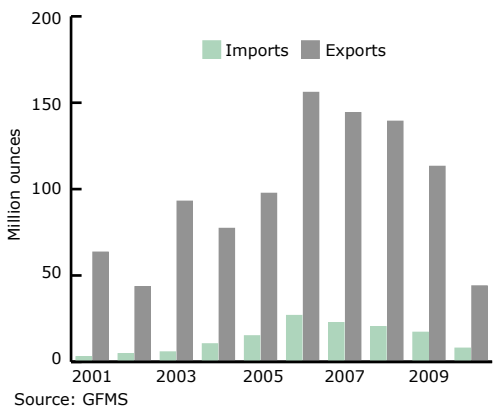
appeared to have been stimulated by the 10% fall in the price compared to the previous month. By contrast, imports between April and August rose consistently from around 5 Moz (140 t) to nearly 8 Moz (250 t) responding to relative price stability. The average rupee silver price during this period rose by just 7%. The last four months saw marked oscillations in imports as the local price moved up sharply. Notwithstanding this, 30% of the annual imports occurred in this period even though the average price in December was nearly 40% higher than in September and 60% up year-on-year. Bullion dealers suggested that much of the demand from September (especially after the rupee price crossed Rs. 35,000/kg) was from investors. (See Chapter 3 for more on investment demand.)

Turning to this year, imports in January were up sharply, mainly servicing investment demand which grew stronger in response to relatively softer prices. However, imports slumped in February as demand from investors waned once the price crossed the Rs. 50,000/kg mark.

East Asia

GFMS estimate that total **Chinese** silver receipts (of bullion, base metal concentrates and powder) fell a modest 2% in 2010 to a combined total of 175.2 Moz (5,449 t). Looking at individual segments in more detail reveals that bullion imports dropped by more than 50% last year (although these usually only account for a small portion of total supply). The largest contributor, at almost 85% of net imports, remained imported base metal concentrates, which, following a slight fall in 2009, rose by just 1% in 2010 to a calculated total of 147.3 Moz (4,580 t). It should be noted that GFMS have revised the methodology in calculating fine silver output from these sources after additional field research. This helps to explain the lower total that was reported in *World Silver Survey 2010*.

Chinese Official Bullion Imports and Exports



Source: GFMS

One area that witnessed a healthy rise last year concerned silver powder imports. Used predominately in photo voltaic cell production, GFMS estimate that on a calculated basis silver powder imports jumped 42% to 19.4 Moz (604 t), in line with the significant rise in the reported production in this area. After analyzing the available trade data and from anecdotal evidence gathered from numerous research visits in 2010-11, GFMS estimate that privately held silver stocks (including metal held by refiners and working stock for fabricators) amounted to over 65 Moz (2,000 t) as at end-2010.

Turning to exports, official trade statistics indicate that silver bullion exports fell heavily in 2010, with total shipments declining by 60% to 45.7 Moz (1,422 t). Not surprisingly, the vast majority of exports (at over 85%) were shipped via Hong Kong, with deliveries to this regional trading hub weaker by more than 50% at 39.5 Moz (1,228 t) last year. Moreover, direct exports to Thailand, India and the United Kingdom all fell acutely. The latter dropped by 11.8 Moz (367 t) or 93% year-on-year, with its share of total deliveries sliding from over 10% in 2009 to less than 2% last year. There were several reasons for the sizable decline in exports in 2010, with perhaps the primary driver being the reduced incentive due to the narrowing of premiums between Shanghai Gold Exchange (SGE) and international prices. In addition, stronger domestic demand for industrial and jewelry fabrication, and the inability of refineries to reclaim the VAT rebate (which was removed in 2007) all combined to push bullion exports lower.

According to official trade statistics, silver imports into **Hong Kong** fell by 37% in 2010 to a seven-year low of 54.4 Moz (1,692 t). Deliveries from the mainland, which accounted for over 70% of the total (compared with in excess of 90% in 2009), fell by more than 50% to 38.5 Moz (1,197 t), as lower premiums between silver prices quoted on the SGE compared to that offered on the international spot market, a stronger domestic market (both industrial and jewelry), and the absence of the VAT rebate program that had motivated exports previously, all provided a diminished incentive for Chinese smelters to export silver. This hefty fall in supply from the mainland was partially offset by strong gains in shipments from

Switzerland and Taiwan (the latter increasing by more than 7.0 Moz or 218 t last year), while supplies from Japan and South Korea both retreated by almost 50%. Hong Kong's exports fell by 9% to 96.8 Moz (3,011 t), with robust gains in flows to Taiwan failing to offset significant falls in Swiss and UK-bound shipments.

South Korean bullion imports rose sharply in 2010, increasing by 40% to 2.9 Moz (90 t), largely as a result of a rapid recovery from the industrial sector which, in the first half of the 2009, had been severely affected by the poor global economic climate. The greatest increase in deliveries emerged from Australia, rising almost 40% and accounting for 85% of supply, while direct imports from China were also more robust, rising by two-thirds year-on-year. Given the stronger domestic demand, it was of little surprise to see exports decline last year, dropping by just 4%, with increased trade to Japan largely offsetting hefty falls to Thailand, Hong Kong and Singapore.

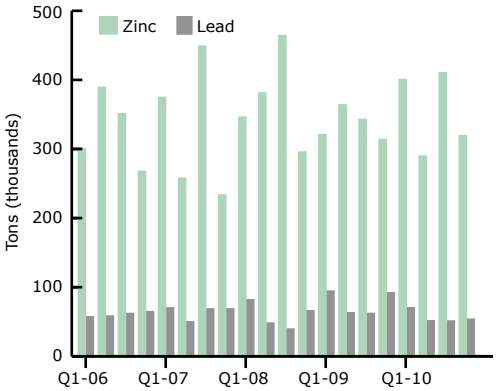
A near 82% fall in deliveries from South Korea drove down **Singapore's** silver bullion imports last year, which fell by over 50% on a calculated basis to 2.7 Moz (83 t). Shipments from Korea, which accounted for almost three-quarters of the total in 2009, declined by a hefty 3.6 Moz (111 t). Part of these losses were offset by increases in shipments from elsewhere, although in the main deliveries fell across the board as the key markets in the region, namely Thailand and Indonesia, imported silver directly rather than using Singapore as a conduit.

GFMS estimate that **Thailand's** silver bullion imports recorded a modest rise last year, up just 2% to 28.3 Moz (880 t) as higher domestic scrap levels reduced demand for fresh silver used in fabrication. Combined imports from China and Hong Kong rose by over 4.1 Moz (126 t), an increase of over a quarter, to contribute over 70% of the total supply. In addition, bullion imports from Germany rose substantially, jumping by more than 2.8 Moz (86 t) or over 380% on 2009 volumes. The rise in deliveries from China and Germany was largely at the expense of South Korea which in 2009 secured almost a quarter of the annual supply, slipping in 2010 by more than 50% to hold just a 10% share. Turning to exports, official trade data indicates a rise of almost 70% last year, although volumes remained at trivial levels. Much of the increase was attributable to an increase in shipments to India, while exports to Vietnam fell by almost a fifth.

Last year, bullion imports into **Japan** bounced by almost 60%. This came in stark contrast to the steep 37% drop seen in 2009, which mirrored crippled offtake in the face of the global economic crisis. The rise in 2010's bullion imports, therefore, reflected the improvement in fabrication demand. The majority of the inflows came in the first quarter, reflecting both pipeline restocking and a positive outlook for future fabrication.

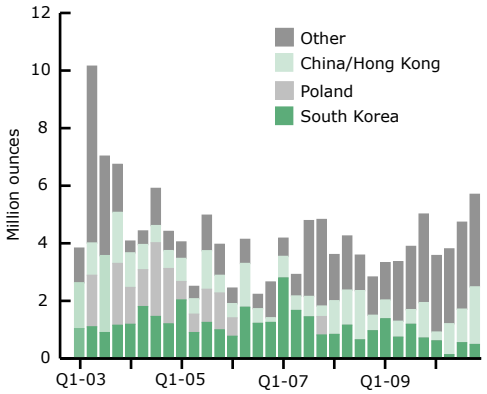
Exports, in contrast, fell sharply in 2010, although this was largely due to the comparison being against extraordinarily high outflows in 2009, as poor local demand triggered heavy shipments into the London terminal market. Nonetheless, 2010 volumes were still historically elevated, partly because demand proved weaker than anticipated, most notably in the latter part of the year.

Korean Lead and Zinc Concentrate Imports



Source: WBMS

Thai Bullion Imports



Source: GFMS

7. Fabrication Demand

- ***World fabrication rebounded by 12.8% in 2010, taking the total to 878.8 Moz (27,333 t) the highest recorded level in over a decade.***

- ***The rise reflected the recovery in the global economy as well as heightened risk aversion, which boosted physical investment demand.***

- ***Industrial offtake accounted for the bulk of the rise in absolute terms, and almost entirely recouped its losses from the economic downturn of 2009.***

- ***The electrical and electronics sector accounted for much of the growth, driven by rising photo voltaic demand and the revival in consumer offtake.***

- ***Jewelry demand expanded by 5.1% last year, with much of the increase concentrated in East Asia, where silver emerged as a viable alternative to its more expensive rival, gold.***

- ***Silverware offtake fell by 13.5%, led by a steep fall in the Indian market.***

- ***Photographic demand for silver fell by 8.3%, marking the slowest rate of decline in five years.***

- ***Coins & medals minting posted a robust increase of 28.3% to reach a record high, propelled by surging investor demand.***

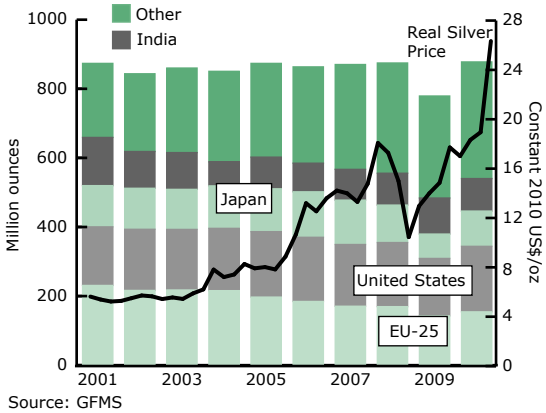
Last year, world silver fabrication staged an impressive recovery, growing by 12.8% to 878.8 Moz (27,333 t). This came within touching distance of the previous record high set in 2000, when offtake reached 900.7 Moz (28,016 t). The main force behind the rise was the rebound in industrial demand, which rose by almost 21% in 2010, following a recession-led drop of 18% the prior year. Gains in the industrial sector more than offset the decline in photographic applications, where silver's losses continued, due to the ongoing migration to digital technologies. This resulted in photographic offtake accounting for 8% of total fabrication demand, compared to the 24% share it held ten years ago.

Silver jewelry offtake provided further support to the rise in global silver fabrication, climbing by 5.1%. Although it may seem counter intuitive that this sector should grow, given the 38% rise in annual average silver prices last year, the industry benefited in part from substitution gains at the expense of gold. Demand for silverware, however, dropped by 13.5%, to around half the level seen in 2000. This reflected both structural losses in western markets, and price-led declines in most price sensitive countries. In sharp contrast, coins & medals fabrication surged ahead last year, achieving the largest percentage increase, of 28.3%, with the category exceeding photographic offtake for the first time in over 20 years. This performance was due to robust levels of physical investment demand in Europe and North America. In so doing, coins & medals offtake saw its share of total fabrication climb to 12%, against just 3% ten years ago.

World Silver Fabrication (by category)

Source: GFMS

World Silver Fabrication (by region)



Source: GFMS

Industrial Applications

• Industrial demand rebounded by 21% in 2010 to 487.4 Moz (15,160 t), largely due to the exit from a global recession and pipeline restocking.

• All regions, bar the Indian Sub-continent, saw gains, with those in Japan being the greatest.

Industrial fabrication in 2010 grew by a hefty 20.7% to 487.4 Moz (15,160 t). As impressive as these gains were, this still left demand a fraction shy of the pre-crisis record in 2008 of 492.7 Moz (15,323 t). (Please note, our historic figures for industrial demand have been raised substantially since *World Silver Survey 2010*, chiefly as a result of a reappraisal of demand in China.)

The main drivers of the rise were ongoing robust emerging market GDP growth, the industrialized world's escape from recession and the residual benefits of the refilling of a denuded supply pipeline. The latter applied mostly to the opening months of the year, which together with early 2009 being extremely weak, meant year-on-year gains were strongest early on last year. However, quarter-on-quarter gains during 2010 were notable and stronger than anticipated. Another factor behind overall growth was the blossoming of newer or novel areas of end-use, in particular photo voltaics.

The largest gain was Japan's as offtake normalized after a traumatic 2009. Major gains were also seen in the United States, China and the EU. The only drop of note was India's due to price damage to its quasi-industrial sectors (if we exclude India, the global rise would be 25%).

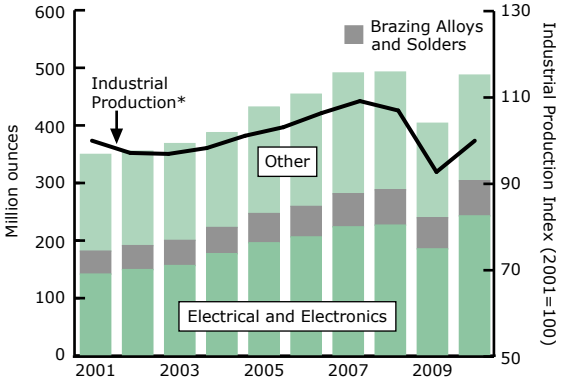
Europe

Total European industrial silver fabrication enjoyed a strong recovery in 2010 as it rose by 18% to 63.7 Moz (1,983 t). As healthy as that might sound, the increase slightly lagged the global recovery's 21% gain and Europe's offtake was still notably short of its pre-crisis (2008) figure of 71.0 Moz (2,208 t). Nonetheless, this rise occurred in the face of aggressive and often successful moves by end-users with significant working capital exposure to silver to reduce work-in-progress and rarely did contacts note any resistance to offtake caused by silver prices rising.

Furthermore, our demand estimates were frequently raised during the year as output proved stronger than anticipated and, even though the benefits flowing through from a general restocking of the supply pipeline were winding down as the year progressed, Europe's industrial demand looks to have grown quarter-on-quarter in 2010. As a result, many contacts now expect to reachieve 2008 levels this year rather than in 2012 or even 2013. Despite that upgrade to expectations as 2010 progressed, it is important to remember that year-on-year increases were notably stronger in the first two quarters as a result of the demand trough seen in early 2009.

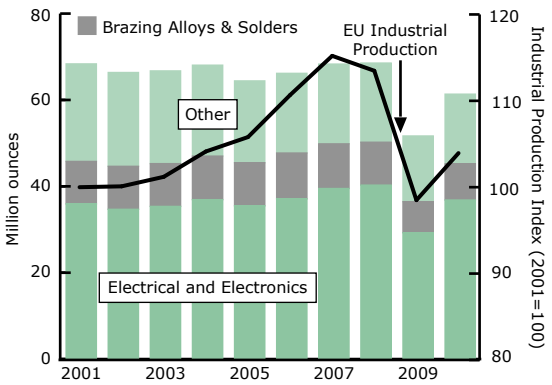
Just over three-quarters of Europe's rise was due to the increase of around 25% in its electrical & electronics sector. This reflected in the main a resurgence in key end-use sectors such as the automotive industry or heavy engineering. It was of note that these sectors are ultimately often supplying markets outside of Europe. In contrast, those segments of end-use with a more local bias (silver bearing products for the construction sector

Components of Industrial Applications



*Advanced economies; Source: GFMS, IMF

EU Industrial Fabrication



Source: GFMS, OECD

for instance) saw a far less buoyant year. The electrical & electronics sector was also fortunate in that substitution out of silver was limited. This was partly a function of silver's unique properties but also stronger copper prices as company research efforts often focused on trying to switch out of the red metal where possible. However, thrifting on silver use within electronics did achieve some success. There was also strong growth in photo voltaics. However, even though Europe, in particular Germany, is a center for cell installation, a fair portion of the benefits in terms of silver fabrication accrued to other countries.

There was also a notable rise of around 15% in Europe's fabrication of brazing alloys & solders. Within this field, those areas with a more industrial or international exposure, such as the tool industry, tended to fare well, while those with a more consumer or regional focus, such as heating/ventilation and even more so plumbing tended to perform less well. Brazing alloys & solders seem to have suffered more than other industrial areas from thrifing and substitution, which, together with this sector being a more mature area, explains why percentage gains were not as strong. Not all end-use segments enjoyed gains, with some contacts noting weakness in sales of silver chlorides and plating salts (the latter's use in silverware plating for example is estimated by some to have dropped by a fifth).

At a country level, the greatest gains, both in absolute and percentage terms, were recorded in Germany. This to a large extent reflects it being home to many world beating original-equipment-manufacturers and it having a greater proportional exposure to the more dynamic electrical/electronics segment within industrial fabrication.

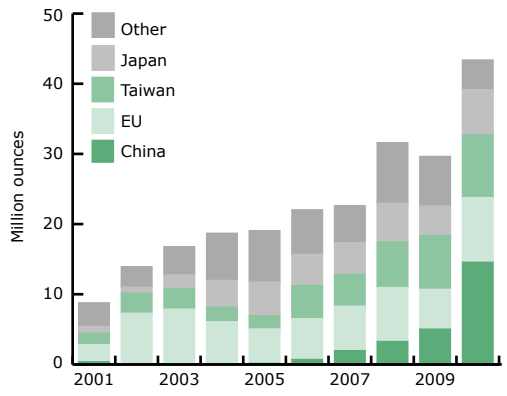
North America

Last year, **US** silver industrial fabrication rose by 19% to 114.8 Moz (3,570 t). As a result, 2010's total fell just short of the record high established in 2008, a threshold that is likely to be eclipsed this year.

Every major category of industrial demand grew last year, although the main driver was undoubtedly the photo voltaic (PV) sector, a sub-set of the electrical industry. As a result of the growth in PVs, the use of silver in electrical applications overtook what has historically been the far more significant electronics category (as shown in the chart below).

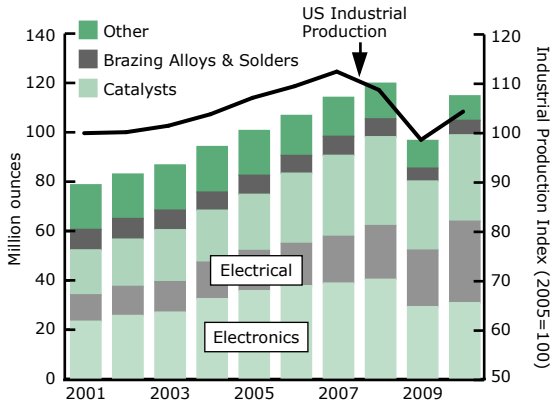
As the focus box on page 62 highlights, global installations of PV cells surged last year, the bulk of which were assembled in China. In spite of the growing PV industry in China, ranging from silver paste houses to PV cell manufacturers, the United States still accounted for a sizable portion of China's intake of silver powder and flake (second only to Japan). In fact, the past four years alone have seen a tremendous rise in US powder exports to China, from just 2.0 Moz (61 t) in 2007 to last year's total of 14.6 Moz (453 t). In fact this performance accounted for the bulk of the growth in total US powder shipments, which have not only risen by 20.8 Moz (645 t) over the last four years, but in fact jumped by 46% (or 13.7 Moz, 427 t) in 2010 alone. It is no coincidence that much of the growth in powder deliveries last year was to countries that boasted paste houses (namely Japan, in addition to China). In addition, US deliveries of silver powders to domestically-based (generally large scale) paste houses also rose appreciably last year, with much of this paste then exported to China, for final assembly.

US Silver Powder Exports



Source: GFMS

US Industrial Fabrication



Source: GFMS, OECD

Table 5 - World Silver Fabrication (including the use of scrap - million ounces)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Europe										
Germany	39.8	35.4	39.1	40.4	40.5	41.0	40.2	40.9	33.0	39.6
Italy	60.0	57.4	55.8	55.4	50.8	46.5	43.8	39.4	34.5	35.2
UK & Ireland	45.2	42.5	43.4	51.6	42.8	32.6	25.1	23.4	19.2	20.7
Belgium	32.1	30.8	29.3	27.6	26.2	28.7	27.3	23.9	19.0	17.7
Austria	1.1	1.2	1.2	1.3	1.3	1.2	1.2	9.0	10.1	12.2
France	29.2	27.7	26.3	13.0	12.5	12.7	13.2	13.5	10.3	11.8
Spain	5.5	5.2	4.8	6.3	5.6	5.0	4.5	4.3	4.0	4.3
Poland	3.4	3.2	3.8	4.3	4.7	4.8	4.4	4.2	3.5	3.6
Switzerland	3.5	3.4	3.0	3.1	3.3	3.1	3.1	3.1	2.8	3.0
Netherlands	1.8	2.1	1.9	2.5	2.2	2.0	2.0	2.0	1.7	1.9
Greece	3.0	2.8	2.9	2.8	2.6	2.5	2.3	2.2	1.8	1.5
Portugal	2.6	1.7	2.7	4.1	1.7	1.5	1.4	1.4	1.3	1.3
Norway	2.3	1.9	2.0	2.1	1.8	1.7	1.3	1.3	1.0	1.0
Sweden	1.0	1.0	1.2	1.2	1.2	1.2	1.1	1.1	0.9	1.0
Denmark	0.9	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6
Czech & Slovak Republics	1.0	0.7	0.7	0.7	0.6	0.7	0.6	0.6	0.5	0.6
Yugoslavia (former)	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Hungary	0.4	0.4	0.4	0.4	0.4	0.2	0.2	0.3	0.3	0.3
Finland	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3
Cyprus & Malta	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3
Romania	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.2
Other Countries	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2
Total Europe	**234.3**	**219.8**	**220.7**	**218.9**	**200.4**	**187.6**	**173.8**	**172.6**	**145.6**	**157.5**
North America										
United States	169.6	177.0	175.3	180.3	189.4	185.8	178.7	185.6	166.2	189.6
Canada	2.9	3.1	2.5	3.5	4.0	5.7	8.0	12.4	13.0	21.4
Mexico	17.1	18.1	20.2	21.9	22.3	18.9	18.5	17.5	16.4	17.2
Total North America	**189.5**	**198.2**	**198.1**	**205.8**	**215.7**	**210.4**	**205.2**	**215.5**	**195.6**	**228.2**
Latin America										
Brazil	6.6	6.4	6.6	7.3	7.5	4.7	7.2	6.9	6.4	7.7
Argentina	1.8	1.9	2.4	2.5	2.6	1.9	1.8	1.4	1.1	1.2
Dominican Republic	0.3	0.2	0.4	0.4	0.5	0.6	0.6	0.7	1.0	1.0
Peru	1.0	1.0	0.7	0.7	0.6	0.7	0.7	0.7	0.8	0.8
Colombia	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6
Chile	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Other Countries	1.0	1.0	0.9	1.1	1.0	1.1	1.1	1.2	1.0	1.1
Total Latin America	**11.8**	**11.6**	**12.1**	**13.1**	**13.3**	**10.1**	**12.4**	**12.0**	**11.3**	**12.9**
Middle East										
Turkey	6.4	8.2	9.4	10.3	9.9	8.9	8.0	8.4	7.1	6.8
Israel	2.7	2.7	2.6	2.7	2.8	2.8	2.8	2.6	2.2	2.2
Egypt	1.8	1.6	1.8	2.0	1.8	1.7	1.7	1.6	1.4	1.4
Iran	1.5	1.4	1.5	1.5	1.6	1.6	1.6	1.5	1.4	1.4
Other Countries	1.8	1.8	1.8	1.9	2.0	2.0	2.0	2.0	2.1	2.3
Total Middle East	**14.2**	**15.6**	**17.1**	**18.4**	**18.0**	**16.9**	**16.1**	**16.3**	**14.3**	**14.0**
Indian Sub-Continent										
India	139.5	106.4	106.4	69.5	91.6	82.8	89.1	92.2	104.3	94.1
Bangladesh & Nepal	5.9	4.8	4.5	4.2	3.7	3.6	3.6	3.7	3.6	3.5
Other Countries	2.2	2.1	2.1	2.3	2.4	2.4	2.4	2.3	2.2	2.0
Total Indian Sub-Cont.	**147.6**	**113.3**	**113.0**	**76.1**	**97.7**	**88.8**	**95.1**	**98.2**	**110.1**	**99.6**

Table 5 - World Silver Fabrication (including the use of scrap - million ounces)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
East Asia										
China	50.8	59.7	67.7	76.1	82.7	91.1	104.2	114.3	110.1	127.2
Japan	119.3	118.7	116.0	123.0	124.1	131.7	128.4	108.4	70.6	102.1
Thailand	32.9	32.6	36.6	37.0	37.0	37.0	36.7	33.6	30.7	30.7
South Korea	19.7	20.7	22.2	23.6	25.5	27.1	29.0	30.7	24.5	29.9
Taiwan	9.4	10.2	11.0	10.6	12.0	13.2	14.7	15.5	12.5	15.3
Indonesia	5.2	4.5	4.7	5.8	5.1	5.7	5.5	5.4	5.2	6.1
Hong Kong	3.2	3.4	3.2	3.4	3.5	3.8	4.0	3.9	3.2	3.7
Vietnam	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.3	1.3	1.4
Myanmar, Laos & Cambodia	0.9	1.0	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.9
Malaysia	0.6	0.6	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.7
Other Countries	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total East Asia	**243.1**	**252.6**	**264.4**	**282.6**	**292.9**	**312.6**	**325.7**	**315.1**	**260.1**	**318.3**
Africa										
Morocco	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.6
Tunisia	0.3	0.3	0.3	0.4	0.4	0.3	0.4	0.4	0.3	0.3
South Africa	0.2	0.2	0.2	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	0.2	0.2	0.2	0.2
Libya	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1
Other Countries	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total Africa	**1.7**	**1.7**	**1.7**	**1.8**	**1.8**	**1.8**	**1.9**	**1.9**	**1.7**	**1.8**
Oceania										
Oceania	6.0	5.8	6.3	5.8	3.9	4.3	6.5	8.7	9.1	11.6
Total Oceania	**6.0**	**5.8**	**6.3**	**5.8**	**3.9**	**4.3**	**6.5**	**8.7**	**9.1**	**11.6**
CIS										
CIS	25.3	25.0	26.7	28.2	29.7	31.0	33.6	34.5	31.4	34.9
Total CIS	**25.3**	**25.0**	**26.7**	**28.2**	**29.7**	**31.0**	**33.6**	**34.5**	**31.4**	**34.9**
World Total	**873.6**	**843.5**	**860.1**	**850.6**	**873.6**	**863.5**	**870.3**	**874.7**	**779.2**	**878.8**

Aside from the PV industry, a range of other end-uses also reported higher demand last year, a function of the global economic recovery. These included the auto industry, which helped lift both electrical and electronics offtake last year. In recent years, silver demand per vehicle has risen considerably, a function of the growing range of devices that utilize contact materials, such as distance and speed limiters, as well as audio and navigation systems. Although base metal contacts have been used in some applications, industrial silver demand has also benefited from this trend. This helped to at least partially alleviate the slump in auto sales during 2008-09 (US vehicle sales in 2009 were 53% below 2007's level), with 2010 in contrast witnessing a 36% rise (source: Global Insight).

Turning to the ethylene oxide (EO) sector, 2010 saw silver oxide demand improve following the marked downturn, which characterized 2009. At that time, both catalyst downtime (see chapter 5) and the commissioning of new plants were postponed (where possible). These deferrals in turn boosted the 2010 total, with available data suggesting that global installed EO capacity posted its largest one year gain, of over 11%, in over 30 years. Silver offtake in this area last year is likely to have exceeded the headline growth rate noted above, because of the ongoing trend towards larger installations, particularly in the Middle East, where installed capacity rose by an estimated 25% last year. In this regard it is worth noting that, while new EO capacity is added in a growing range of locations, the United States dominates the production of silver oxide (the point at which silver fabrication is captured), as well as the manufacture of the EO plant itself.

The fabrication of brazing alloys & solders (dominated by the former), rose by close to 13% last year. This may appear modest, compared with the growth in several

Table 6 - Silver Fabrication: Industrial Applications (including the use of scrap - million ounces)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Europe										
Germany	21.4	21.2	21.7	23.5	23.9	25.5	27.4	27.5	20.2	26.2
UK & Ireland	14.3	13.9	14.9	15.5	12.4	12.5	12.0	12.1	9.1	10.0
Italy	10.4	10.4	10.2	11.5	10.9	10.9	11.3	11.2	9.0	9.9
France	15.9	14.6	13.8	10.3	10.2	10.4	10.7	10.8	7.5	8.8
Switzerland	2.7	2.7	2.3	2.4	2.6	2.5	2.5	2.5	2.2	2.4
Spain	1.3	1.3	1.2	2.1	1.9	1.9	1.9	1.9	1.7	1.8
Netherlands	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.3	1.5
Poland	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.7	0.7
Austria	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.5
Norway	0.7	0.6	0.6	0.8	0.7	0.6	0.5	0.5	0.4	0.4
Sweden	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Czech & Slovak Republics	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3
Belgium	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
Other Countries	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.6	0.7
Total Europe	**71.1**	**69.1**	**69.0**	**70.5**	**67.0**	**68.6**	**70.8**	**71.0**	**53.9**	**63.7**
North America										
United States	78.7	83.1	86.8	94.2	100.8	106.8	114.1	119.0	96.8	114.8
Mexico	3.0	3.0	3.1	3.0	3.2	3.1	3.3	3.1	2.7	2.9
Canada	0.5	0.5	0.5	0.6	1.0	1.7	2.7	2.4	1.3	1.9
Total North America	**82.3**	**86.6**	**90.4**	**97.8**	**105.0**	**111.6**	**120.0**	**124.6**	**100.8**	**119.6**
Latin America										
Brazil	3.2	3.2	3.0	3.7	4.5	2.9	4.0	3.9	3.5	4.2
Argentina	0.6	0.6	0.6	0.6	0.9	1.0	1.1	1.0	0.8	0.9
Colombia	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
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	0.3	0.4
Total Latin America	**4.5**	**4.5**	**4.3**	**5.0**	**6.0**	**4.6**	**5.7**	**5.5**	**4.8**	**5.7**
Middle East										
Turkey	1.1	1.2	1.4	1.5	1.5	1.6	1.6	1.6	1.4	1.5
Israel	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7
Egypt	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Oman	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other Countries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Middle East	**2.2**	**2.3**	**2.4**	**2.5**	**2.5**	**2.6**	**2.7**	**2.7**	**2.3**	**2.5**
Indian Sub-Continent										
India	50.8	44.4	44.4	33.9	53.7	54.2	63.9	65.0	64.8	63.6
Pakistan	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total Indian Sub-Cont.	**51.1**	**44.7**	**44.7**	**34.1**	**54.0**	**54.6**	**64.2**	**65.3**	**65.1**	**63.9**
East Asia										
China	33.2	37.7	42.6	47.2	52.9	58.2	67.5	78.0	73.1	84.4
Japan	55.4	59.1	60.4	73.7	84.1	89.5	90.9	73.7	45.6	79.0
South Korea	15.0	16.2	17.5	19.0	20.8	22.3	24.1	25.9	19.7	24.5
Taiwan	9.0	9.9	10.7	10.3	11.6	12.7	14.2	15.0	12.1	14.7
Hong Kong	2.7	3.0	2.9	3.1	3.2	3.4	3.6	3.5	2.8	3.3
Other Countries	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.8	0.6	0.9
Total East Asia	**115.9**	**126.3**	**134.6**	**153.8**	**173.1**	**186.6**	**201.0**	**196.9**	**153.9**	**206.8**

Table 6 - Silver Fabrication: Industrial Applications (including the use of scrap - million ounces)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Africa										
Morocco	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.3
South Africa	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other Countries	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Africa	**0.5**	**0.5**	**0.5**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
Oceania										
Oceania	2.1	2.1	2.2	2.2	2.0	2.1	2.1	2.1	1.9	2.0
Total Oceania	**2.1**	**2.1**	**2.2**	**2.2**	**2.0**	**2.1**	**2.1**	**2.1**	**1.9**	**2.0**
CIS										
CIS	20.1	19.3	20.3	20.9	21.6	22.9	23.9	23.9	20.5	22.5
Total CIS	**20.1**	**19.3**	**20.3**	**20.9**	**21.6**	**22.9**	**23.9**	**23.9**	**20.5**	**22.5**
World Total	**349.7**	**355.3**	**368.4**	**387.4**	**431.8**	**454.2**	**491.1**	**492.7**	**403.8**	**487.4**

other categories, but two points are worth noting. First, the *consumption* of brazing alloys improved at a faster rate, because of the growth in imports, principally from Canada, where the increase in brazing alloys & solders fabrication far exceeded that in the United States. Second, the recovery in the US economy was far from uniform, with the housing and construction sector realizing relatively little improvement, compared with the previous twelve months.

In spite of the noteworthy growth in US industrial demand last year it would be wrong to conclude that the trend towards higher silver prices had no impact on the sector. In general, there were few signs of a shift away from silver (because of the metal's technical properties). However, the brazing sector did see a greater take-up of plastics and aluminum, but this formed part of a long-term, gradual shift, rather than representing a step change last year. Instead, the industry looked to balance the level of work-in-progress stocks against stronger end-use demand. In spite of a healthy demand trend, it was not uncommon for fabricators to reach their credit limits, with pressure brought to bear on lease lines because of the growth in silver demand and the surge in silver prices. As a result, the industry maintained much of its just-in-time focus, a development which had gained in prominence in 2009, but which often therefore created extended lead times for product delivery. In addition, it became increasingly common for fabricators to ask their customers to supply feedstock, which in turn helped to reduce leasing requirements.

United States Industrial Production

(Index, 2001 = 100)

2006	2007	2008	2009	2010
109.5	112.5	108.8	98.6	104.4

Source: OECD

Looking ahead to 2011, current indications point towards further growth in US industrial demand, led once again by the PV sector. Although it is too early to extrapolate for the full year, new capacity additions in the United States, especially in the powder and flake sector, do suggest that deliveries to silver paste houses, both domestically and overseas, are likely to eclipse 2010's record total.

India

Industrial demand for silver in India declined by a modest 2% to 63.6 Moz (1,979 t) last year. This was driven by a steep fall in price sensitive uses, which outweighed gains in 'authentic' industrial applications of silver. The fate of the former category was hardly surprising, given that average rupee silver prices rose by over one-third in 2010. By contrast, gains in the core industrial sector were supported by robust economic growth (Indian GDP growth for the fiscal year ending March 2011 reached 9.2%, up from 7.4% in the previous year). Total industrial demand once again outstripped combined demand from jewelry, silverware and investment, albeit marginally.

'Authentic' industrial demand includes the use of silver in electrical & electronics applications and brazing alloys & solders. Compared to a decade ago, this sector has grown more than three-fold, primarily on the back of

Indian Vehicle Production

(units, 000s)

2006	2007	2008	2009	2010
1,680	1,964	2,065	2,402	3,242

Source: Global Insight

economic liberalization (and notwithstanding the over 330% increase in the silver price over that time frame).

The use of silver in electrical & electronics in 2010 was 9% higher, mainly led by strong contact manufacturing. According to the Indian Electrical & Electronics Manufacturers' Association, the switchgear industry grew by 34% (based on volume) in the period April-September 2010. This was led by a sharp rise in demand for both high and low voltage products, which in turn was driven by renewed momentum in the realty sector after the hiatus in projects during 2009 due to the credit crunch.

Switchgear manufacturing companies saw a notable increase in orders for domestic applications as a result of the release of pent-up demand. In addition to this, process automation and the modernization of infrastructure such as hospitals, commercial complexes, railways, roadways and schools also provided a boost to this sector. Ongoing government programs for rural electrification also created strong demand for low and mid-voltage switchgears. Contact demand from the automotive sector accelerated on the back of the extraordinary 35% growth in the country's vehicle production last year (source: Global Insight).

Demand for silver in brazing alloys & solders grew by 6% last year, also as a result of growth in infrastructure and construction activity. In particular, work for the 2010 Commonwealth Games, hosted in New Delhi, created significant demand for brazing materials in the construction industry, as well as in air-conditioning units.

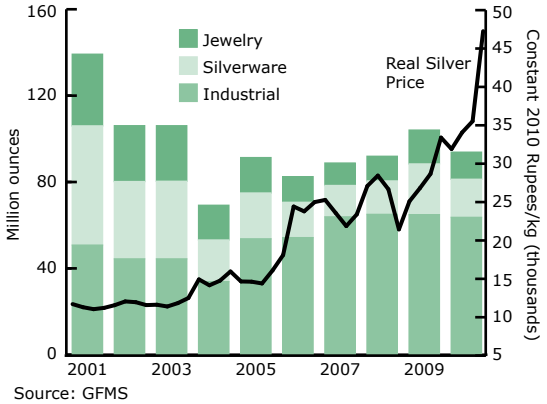
Turning to the price sensitive areas of demand, the use of silver in making jari (silver threads used in the weaving of sarees and embroidery) once again registered the biggest drop last year. The 15% fall came about as the cost of jari sarees rose sharply following the 34% rise in average rupee silver prices. The substitution of silver by chemical and plastic based threads was the main cause of the sharp fall in demand.

Silver foils, mainly used in decorating sweets, tobacco and other special food preparations saw a drop of 10%, also owing to higher prices. The fraudulent use of other metals, mainly aluminum, to reduce silver purity was the chief reason behind the decline. Demand for silver in plating saw a 7% fall last year. The losses here were thanks to the shift from silver-plated copper imitation jewelry to high-end silver fashion jewelry, as well as from plated silverware to sterling silverware. The use of silver in pharmaceuticals, chemicals, and for miscellaneous decorative purposes (mirrors, for example), recorded slight declines of just 2% and 3% respectively.

East Asia

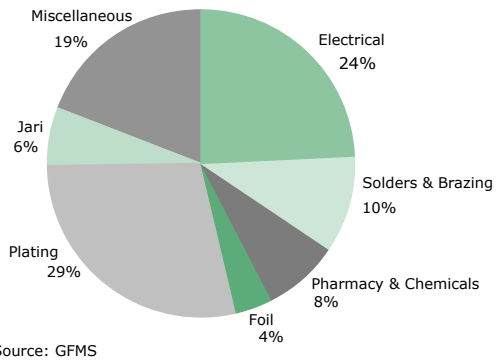
In 2010, **Japanese** industrial demand reached some 79.0 Moz (2,456 t), 73% higher than in 2009 and over 7% higher than the 2008 level. Scratch beneath the surface of this headline figure, however, and it becomes apparent that this was not a uniform recovery. Rather, surging growth in the photo voltaic (PV) sector drove the total higher, boosting comparatively modest gains in the more established end-uses. Indeed, without PVs, total industrial demand would have remained below

Indian Fabrication



Source: GFMS

Indian Industrial Fabrication, 2010



Source: GFMS

Japanese Industrial Production

(Index, 2001 = 100)

2006	2007	2008	2009	2010
113.1	116.3	112.6	88.6	102.2

Source: OECD

Japanese Non-Photographic Nitrate & Contact Production

Million ounces

	2007	2008	2009	2010
non-photo nitrates	24.5	20.8	12.9	19.6
contacts	11.4	9.9	4.8	9.0

Source: GFMS

that reached in 2008. Although the economic cloud of 2009 had lifted considerably, it was not forgotten, and persistent yen strength compounded the headache for many manufacturers last year.

The use of silver nitrates (non-photographic) recovered by almost 50% last year, although the low base of demand in 2009 flatters the year-on-year comparison. Nonetheless, a combination of pent-up demand of end-use products (mostly electrical and electronic items), positive consumer sentiment and less dismal GDP growth saw robust re-stocking of the pipeline in the first half of the year. This catered for immediate demand, and also anticipated strong offtake later in the year. In the second half of 2010, however, demand failed to materialize in line with expectations, which led to swollen inventories.

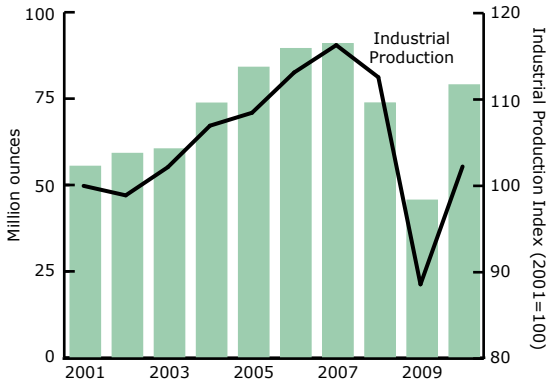
Demand for silver contacts rebounded yet more strongly, and came within striking distance of their 2008 level. This was driven by a healthy recovery in the auto sector, where total vehicle production exceeded nine million units (from barely over seven million in 2009), thanks largely to the government's subsidy program. Support also came from the recovery in the electronics sector, where consumer demand revived from the 2009 low.

The construction industry provided only a marginal boost for contact demand, given the sector's lackluster rebound. The muted recovery in construction also affected demand for brazing alloys & solders. The extent of the decline posted in 2009, however, still meant that the year-on-year comparison appeared extremely favorable, with total offtake in this category rising by some 50%. Nonetheless, the construction industry still had sustained deflation, a lack of credit to start new building programs and constrained consumer incomes to contend with, which acted as a severe drag on recovery. Offtake for refrigeration and air conditioning units also proved limited, although healthy demand for residential air conditioning units for export helped to boost the total.

The PV sector proved to be the strongest source of silver industrial demand in Japan last year, and offtake comfortably doubled year-on-year. Domestic and export demand for Japanese silver powder, used to make silver paste for thick film PV cells, travelled on a blistering upwards trajectory, benefiting manufacturers who could make the most of economies of scale. Despite fears (which became reality in many countries, addressed in the focus box on page 62) that government Feed-in-Tariffs would be withdrawn, demand for silver in this sector remained unshaken.

With the exception of PV demand, therefore, industrial demand in Japan last year still bore the scars of 2009's recession. This has led some manufacturers to suggest that the pertinent question is not 'when' will Japanese industrial demand return to pre-crisis levels (that is, 2007), but 'if' it is likely to achieve such levels at all. Not only does manufacturing continue to ebb out of Japan into lower cost centers, high silver prices are also accelerating the pace of substitution and thrifting. This means that a strong rise in the number of end-units made does not necessarily translate to a corresponding increase in silver volumes, as each item will have a lighter load of silver. Although the effects of both of these issues are only likely to become apparent in the long-term, we are mindful that there is a very real possibility that Japanese

Japanese Industrial Fabrication



Source: GFMS, IMF, OECD

The Main Uses of Silver

Silver has unique properties which 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 alternative metals in most applications, particularly in high-tech applications in which reliability, precision and safety are fundamental.

Industrial

Silver possesses a number of technological qualities which make it ideal for a range of industrial applications. In particular, silver is the best electrical and thermal conductor of all metals, which makes it indispensable in numerous electrical applications, including conductors, switches, contacts and fuses. This includes the use of silver in electronics in the preparation of thick-film pastes, including 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.

Contacts provide junctions between two conductors that can be separated and through which a current can flow, and also accounts for a sizable proportion of electrical demand. Conductive silver inks, made from silver paste (manufactured from silver powder), are printed onto a wide array of devices, including photo voltaic cells, solid state lighting devices, sensors, radio frequency identification tags and plasma display panels. Silver provides both exceptional conductivity and ease of electro-deposition from a double-alkali metal cyanide, such as potassium or silver cyanide, or by using silver anodes, at relatively low cost. Silver is also used as a coating material in optical data storage media, including DVDs.

The unique optical reflectivity of silver, and its property of being virtually 100% reflective after polishing, allows it to be used both in mirrors and glass coatings, cellophane or metals. Batteries, both rechargeable and non-rechargeable, are manufactured with silver alloys (increasingly silver-zinc) as the cathode and are regarded as a rapid growth area. 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 electrical products though demand from laptop and automotive industries is growing rapidly.

Silver, usually in the form of mesh screens but also as crystals, is also 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 and automobile industries.

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.

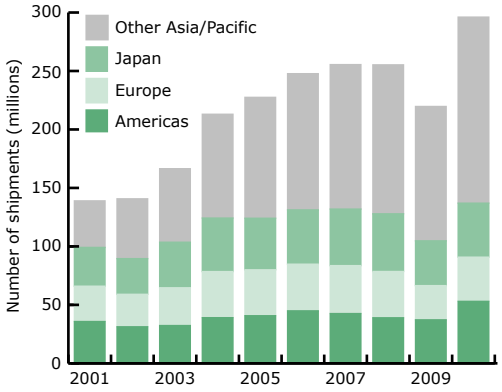
Jewelry and Silverware

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 amounts 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 and especially in American, Australian, Canadian, Austrian and Mexican bullion coins for investors.

Global Semi-conductor Billings



Source: SIA

fabrication may not return to its former levels. Finally, the longer term impact of the recent earthquake and tsunami on Japan's economy and industrial capabilities (as well as the potential impact on the global economy) may heighten this possibility further, although it is of course too early to tell what the eventual outcome will be.

Chinese industrial offtake saw a return to healthy growth last year reaching a new record after a minor hiccup in 2009, increasing 15% to 84.4 Moz (2,625 t). The strong gains were chiefly a function of growth within the electrical & electronics segment, which benefited from strong domestic economic growth (the economy grew by over 10% in 2010) and from a recovery in exports, which had floundered during the recessionary conditions of 2009. While growth in the largest segment, electrical and electronics, was the mainstay of the rise last year (jumping almost 23%), all segments of industrial demand recorded healthy year-on-year increases.

It should be noted that GFMS estimates of Chinese industrial demand for 2010, and indeed our back series, have undergone a substantial upwards revision. This was due to new information unearthed during several field research visits last year, which necessitated a thorough review of previous estimates and calculations. Based on our revised numbers, China has now moved into second position in terms of fine silver consumed for industrial uses, standing only behind the United States having overtaken both Japan and India.

China's semi-conductor production has experienced an annual growth rate of 25% since 2000, which is more than three times the GDP growth rate over the same period. Growth in household appliances and consumer electronic items again drove the market higher last year, boosted in the case of white goods by government stimulus programs and rising wages. Moreover, a further surge in cell phone production to over one million units last year (a rise of almost a third over 2009) lifted Chinese output to almost 70% of the global total. This was in addition to a significant rise in demand for other personal electronic goods, with the greatest area of growth witnessed in note books, tablet computers, and LED production for use in LED-backlit LCD televisions. Furthermore, growth from the automotive sector also fuelled demand for industrial silver, with sales of vehicles in China jumping by almost a third to over 18 million vehicles. Demand for semi-conductors used in this arena has grown exponentially in the last few years, as use of electronics in vehicles has risen. It also holds the potential to show strong future growth as the automotive industry migrates to hybrid and electric vehicles.

Chinese demand for brazing alloys & solders rose by almost 8% in 2010, to 28.0 Moz (870 t). Healthy demand on the domestic front for use in the production of air conditioning units, refrigeration, and for infrastructure construction (a function of the surging economy) boosted offtake, with improved demand from export markets also assisting.

Growth in silver used as a catalyst in the production of ethylene oxide (EO), used primarily to produce mono ethylene glycol, has continued to rise at an expeditious rate, with several new facilities on the horizon as foreign companies look to establish joint venture operations with Chinese partners. Similarly, rapid advancements in China's photo voltaic fabrication capacity has seen demand for silver paste surge in the last couple of years, and, while the vast majority of pastes are still derived from imported powders (mainly from the United States and Japan) and therefore credited to these countries of origin using GFMS methodology, domestic production is rising sharply and is thought to be approaching almost 10% of China's annual PV requirements.

Global Billings

(semi-conductor shipments per year, millions)

	World	Americas	Europe	Japan	Other Asia
2009	219.7	37.2	29.3	38.3	114.9
2010	296.1	53.0	37.8	46.2	159.1
Change	76.4	15.8	8.5	7.9	44.2
Change %	35%	42%	29%	21%	38%

Source: SIA

Table 6a - Silver Fabrication: Electrical and Electronics (including the use of scrap - million ounces)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
United States	34.1	37.6	39.5	47.4	52.1	55.0	57.7	61.4	52.4	64.0
Japan	26.6	29.4	30.2	38.0	43.7	46.0	46.8	38.7	28.2	51.1
China	16.3	17.1	18.8	21.0	23.5	25.8	31.5	35.5	31.3	38.4
Germany	15.7	15.6	16.2	17.7	18.3	19.7	21.4	21.7	15.7	21.0
South Korea	9.3	9.8	10.7	11.6	12.9	13.8	14.7	15.9	12.5	16.1
India	4.7	4.9	5.1	5.4	9.6	10.0	12.5	13.5	14.2	15.4
Taiwan	7.5	8.4	9.0	8.4	9.4	10.3	11.7	12.3	9.9	12.1
France	11.0	9.9	9.5	8.1	8.0	8.2	8.5	8.6	5.7	6.9
Italy	2.8	2.8	2.9	3.8	3.5	3.6	3.9	4.1	3.4	3.9
UK & Ireland	5.6	5.5	5.9	6.1	4.5	4.4	4.5	4.7	3.4	3.9
Hong Kong	2.5	2.8	2.7	3.0	3.0	3.3	3.5	3.3	2.7	3.1
Mexico	1.8	1.8	1.9	1.8	2.1	2.0	2.1	2.1	1.8	1.9
Brazil	1.3	1.3	1.2	1.7	2.1	0.9	1.5	1.5	1.2	1.6
Turkey	0.7	0.8	1.0	1.0	1.0	1.0	1.1	1.1	0.9	1.0
Australia	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7
Netherlands	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5
Switzerland	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.5	0.4	0.5
Spain	0.0	0.0	0.0	0.3	0.3	0.3	0.4	0.3	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
Other Countries	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
World Total	**141.8**	**149.6**	**156.7**	**177.2**	**196.2**	**206.4**	**223.9**	**226.8**	**185.6**	**242.9**

Table 6b - Silver Fabrication: Brazing Alloys and Solders (including the use of scrap - million ounces)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
China	10.6	12.2	14.4	15.8	17.8	18.8	20.7	25.4	25.9	28.0
India	1.8	1.9	2.0	2.2	4.2	4.3	5.2	5.7	6.1	6.5
United States	8.3	8.4	7.9	7.3	7.7	7.2	7.7	7.2	5.2	5.9
Japan	3.5	3.3	3.3	3.7	3.8	3.9	4.0	3.7	2.3	3.4
Germany	2.8	3.0	3.1	3.2	3.2	3.4	3.6	3.4	2.3	2.8
South Korea	1.2	1.4	1.4	1.6	1.9	2.0	2.4	2.6	2.1	2.3
UK & Ireland	2.7	2.5	2.8	3.0	2.9	3.1	2.4	2.3	1.8	2.2
Italy	2.0	2.1	2.0	2.0	2.2	2.4	2.5	2.4	1.7	1.8
Canada	0.3	0.3	0.3	0.4	0.8	1.5	2.4	2.2	1.1	1.7
Switzerland	1.3	1.3	1.4	1.4	1.5	1.4	1.4	1.4	1.2	1.3
Taiwan	0.9	1.0	1.1	1.1	1.1	1.2	1.3	1.2	1.0	1.2
Brazil	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.9	1.0
France	1.0	1.0	0.8	0.7	0.8	0.8	0.9	0.8	0.5	0.6
Spain	1.0	1.0	0.9	0.8	0.6	0.6	0.6	0.6	0.6	0.6
Australia	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5
Mexico	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4
Netherlands	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Indonesia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Other Countries	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3
World Total	**39.8**	**41.6**	**43.7**	**45.5**	**50.8**	**52.9**	**57.4**	**61.3**	**54.0**	**60.8**

New Uses of Silver in Industrial Applications

The use of silver is well established in the many industrial applications outlined in the main body of this chapter. There are, however, a significant number of 'new' uses for silver. While many of these have already achieved commercial success, they have yet to make a significant impact on silver demand, but hold the potential to become significant end-users of the metal. Such uses have been comprehensively addressed in a recent report by GFMS, *The Future of Silver Industrial Demand*, highlights of which are summarized here.

Silver's main uses, both new and established, are respectively centered on exploiting its biocidal or conductive properties. There is one development in particular in silver which has affected its use in both of these sectors. This is 'nanosilver' which, although not a new substance in the strict sense of the word, has only relatively recently gained commercial recognition, appearing in a wide range of products including textiles, food packaging and medical uses. The main difference with 'ordinary' silver is particle size: nanosilver typically measures between 1-100 nanometers. Nanosilver essentially replicates silver's established properties, but can often perform them using a far smaller volume of metal, owing to the greater surface area of each silver particle which enhances each particle's potency. In most of the uses addressed below, therefore, it is possible to use nanosilver in place of ordinary silver.

In the medical sector, the use of silver has gained an increasing presence (in both ordinary and nano form). Applications include creams, bandages and powders. With regard to bandages, the inclusion of silver has been shown to minimize wound adhesion to the dressing surface, thereby lessening pain. Silver can also be used in catheters and other medical implantation devices, and these have been shown to reduce infection rates following treatment. Despite the higher initial cost of the silver-bearing types, therefore, the savings made on aftercare may well justify the initial cost. The absolute volume of silver used in the medical sector is still small, however, compared to those consumed by established end-uses. Last year, for example, offtake in medical uses is estimated to have reached less than 0.5 Moz (16 t). Other uses of silver in a medical context can be found in anti-bacterial paints and textiles (such as clothing and bedding), which can also be found in a domestic context.

Water purification devices also make use of silver's biocidal qualities, in products including silver-impregnated ceramic filters, silver deposited on activated carbon, and silver nitrate. Silver has been shown to inhibit fungal growth and destroy bacteria. The white metal is also used as a catalyst in the formation of hydrogen peroxide, which is in turn used to disinfect water. Total silver use is thought to have reached no more than 2 Moz (62 t) last year. Silver can also be used in food packaging, applied as a coating or embedded in a polymer. Cooking utensils, kitchen detergent and refrigerators also utilize silver's anti-bacterial properties. The wood preservatives sector has also garnered significant interest as a potentially significant end-user of silver. This was prompted by the voluntary withdrawal of Chromated Copper Arsenate (CCA) in the United States in 2003 (the former industry standard), which presented silver with an opportunity to develop market share. Although silver has shown efficacy against decay and termite damage, its high cost compared to safe copper alternatives may prove to be a hindrance in demand going forward, starting from an estimated base of 0.2 Moz (6 t) in 2010.

Silver use in batteries, however, shows more promising scope for gains from its current level of around 5.0 Moz (150 t) per year (mainly in silver oxide button batteries). Demand for silver-zinc batteries is set to grow strongly, given their use in products including smart phones, laptops, and tablets. In such items, performance is paramount, and silver's high performance offsets its higher cost. Silver-zinc batteries may also have a future in electric vehicles, although it will be some time before these would become a significant end-user of the white metal.

Solid state lighting (SSL) is another area that shows considerable potential for future silver demand. SSL uses semiconductors to produce light with either light emitting diodes (LED) or organic light emitting diodes (OLED), rather than electrical filaments, plasma or gas. Both LED and OLED produce electroluminescent light when a current is passed through electrodes, and these electrodes can be made of silver. SSL is less expensive and more energy efficient than traditional types of lighting. This, combined with the fact that the use of incandescent light bulbs has already been banned in some countries (including Brazil and Argentina), and is being phased out in others (Europe and the United States), bodes well for future silver demand. Demand last year was believed to be less than 1 Moz (31 t).

Silver can also be used in Radio Frequency Identification (RFID) tags, which use printed silver ink, made from silver nitrate. RFID tags can be used to track inventories, or replace bar codes, compared to which they can store considerably more data. In essence, their role is to transmit data stored on the tag (usually in a chip) to a reader, via an antenna. Silver can be used in the antenna and to form a bond between the chip and the tag itself. Nanosilver inks have already achieved some commercial use. The silver loading per tag is extremely small, however, and silver-based tags face tough competition from less expensive alternatives.

With regard to these uses, it is important to note that while the silver consumption per unit may be small, their collective use may amount to substantial volumes in future. Given that number of possible applications is likely to proliferate, their total silver use holds strong scope for future growth.

Global Photo Voltaic Market

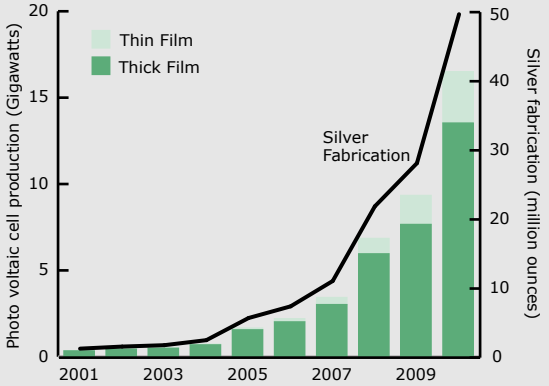
Last year, silver demand in the production of photo voltaic (PV) cells soared by over 70% to reach a record 50 Moz (1,546 t). The pace of this increase outpaced gains in all other areas of industrial uses, although this was largely in reflection of the fact that the solar industry is still in a growth phase, and heavily supported by government incentive programs known as Feed-in-Tariffs (FiTs). At present, the largest producers of silver powder (for making into paste) are the United States and Japan, while the largest solar markets (in terms of installations) are Germany and Italy.

The main beneficiary of the solar industry's growth, which saw cell installations reach some 16GW, was thick film solar cells. Thick film technology is silver intensive (bearing around 0.15 - 0.25 grams per cell, on average), compared to thin film technology, where silver use is negligible. Thick film maintained its majority share, of close to 80% of the total market last year as the higher efficiency of thick film cells still proved incentive enough to offset the higher initial cost of the cell.

The solar industry did not escape entirely unscathed from the effects of the global economic downturn. As had been widely feared, a number of governments across Europe (including Spain, France and the Czech Republic) took measures to retrospectively alter the terms of their FiTs, given their respective debt crises. The impact of such action was, however, confined to shaking investor confidence in the future of the solar industry, rather than materially affecting demand last year. In addition, some demand was pulled forward last year as consumers sought to lock in rates before new, less attractive terms were implemented (notably in Germany).

In conclusion, the success of the solar industry going forward is still heavily contingent on a number of factors, including: the sustainability of FiT programs, investor support, technological developments in solar and other renewable energy sources, oil prices and the global macroeconomic backdrop. The long-term political will behind solar still seems positive, however, as does consumer enthusiasm for green energy, offering a bright future from which silver demand is expected to benefit.

Photo voltaic Production



Source: Solarbuzz, Photon International, GFMS

Industrial fabrication in **Hong Kong** is thought to have risen by around 16% to 3.3 Moz (102 t) last year, recovering most of the losses given up in 2009 during the global recession. Demand for electronics, Hong Kong's largest export earner, recorded a forceful rebound in early 2010, with exports of finished electronics growing more than 15% in the first 11 months, while those of electronics parts and components jumped over 40% for the similar period. Challenges remained for much of the year as key US and European markets remained soft after suffering the effects of the economic meltdown and a slower than expected recovery. However, rising demand from intra-regional trade and particularly from the Chinese mainland for high-end products boosted industrial offtake and offset falls in exports elsewhere.

South Korean industrial offtake rebounded strongly last year to near record levels, with output jumping by almost 25% to 24.5 Moz (762 t), chiefly on account of renewed strength in the electrical & electronics component. The significant rise that this segment enjoyed was a function of increased domestic consumption (South Korea's economy grew by 6.1% last year, an eight year high), surging export demand from the developing world (mainly India and China) and the return, albeit modest, of end-user demand in western markets.

Looking at individual sectors in detail reveals a similar pattern of growth across a myriad of applications. Indeed, it is estimated that demand for the key electronics industry jumped 28% last year to 16.1 Moz (500 t) as growth from emerging applications such as LED and silver pastes used chiefly in photo voltaic film production augmented new metal demand. In addition, sensors and MEMs (micro-electro-mechanical) used increasingly in automotive applications, as well as household electrical and electronic appliances such as smart phones, LCD televisions and tablet computers, have increased demand for semi-conductors, electronic chemicals, and polymers.

Furthermore, demand for brazing alloys & solders enjoyed a return to solid growth in 2010, with GFMS estimating offtake rose by almost 12% as soft domestic demand was offset by significant construction growth in foreign markets (China and the Middle East in particular, with the latter being responsible for two thirds of South Korea's overseas construction orders). Another key area of growth in South Korean silver industrial fabrication in 2010 was in EO industry, which benefited last year from further expansion as output was raised to meet increasing demand from China.

Industrial fabrication in **Taiwan** returned a healthy 22% growth rate last year after suffering a disastrous 20% drop in 2009 as global economic growth stagnated. In 2010 the domestic economy grew at 10.8%, the fastest rate for 24 years, while stellar growth from the island's main trading partner China (receiving almost 42% of total exports) also played a fundamental role in the rapid recovery. This helped offset some lost momentum from the United States and European markets.

Growth in demand for silver used in the electrical & electronics sector played a key role in the sharp rise last year as strong sales of electrical products were boosted by government stimulus packages and demand from the developing world for household electronic consumer items. In addition, growth for electrical contacts within the automotive sector also boosted offtake. Strength was seen on both the domestic front, where vehicle production grew by 11% last year, and from China where it grew even faster. Finally, the rapid expansion of production of solar conductive silver pastes in Taiwan for use in photo voltaic cells also grew strongly and is expected to advance at an expeditious rate in 2011.

Photography

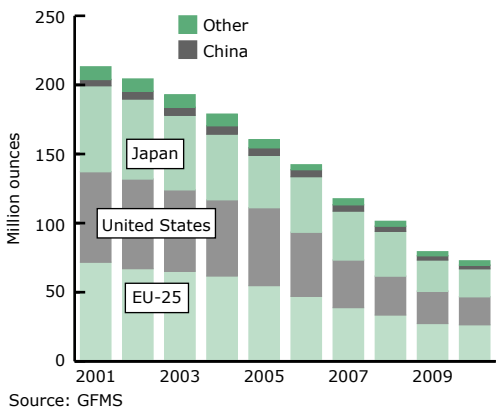
- ***Silver demand in photographic applications fell by 8% in 2010, the first single digit percentage drop seen in five years.***

In 2010, global photographic demand for silver fell by 8%, settling at 72.7 Moz (2,261 t). Although this marked the lowest total recorded in GFMS' data series, it was nonetheless the slowest percentage decline seen in five years. It also, however, marked the first time that photographic offtake accounted for less than 10% of total fabrication demand, compared to its 30% share held in 1990.

A key reason that the 2010 fall was relatively restrained was that demand from the medical sector, which accounts for the largest sector of photo-related silver demand, fell by just 3% last year. This was primarily due to the fact that in many industrialized countries, hospitals deferred conversions due to a lack of funding. Furthermore, steady demand from developing world countries also helped to soften the pace of decline. In such markets, digital technology is still prohibitively expensive, but their economic situation is sufficiently improved so as to generate demand for conventional X-rays.

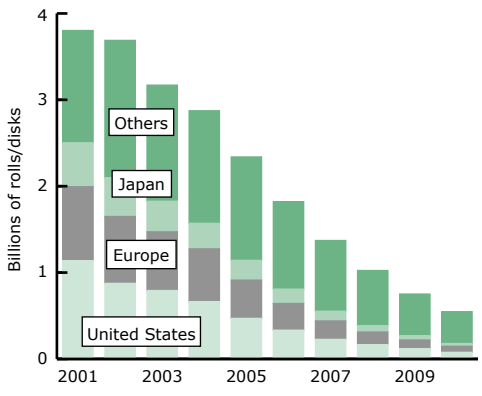
In contrast, global demand for film rolls (consumer and professional) fell by 25%, while color negative paper fell by 12%, according to data from Photofinishing News. The ongoing migration into digital systems was the main driver of these declines. Looking ahead, silver demand in photographic applications is set to fall further, leaving a core base in niche artistic or graphic art-based photography. The rate of decline may decelerate,

World Photographic Fabrication



Source: GFMS

World Consumer Film Sales



Source: Photofinishing News Inc.

Table 7 - Silver Fabrication: Photographic Use (including the use of scrap - million ounces)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Europe										
EU-25	71.5	66.9	65.0	61.6	54.6	46.9	38.9	33.5	27.4	26.5
Other Countries	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0
Total Europe	**71.7**	**67.1**	**65.2**	**61.8**	**54.8**	**47.0**	**38.9**	**33.5**	**27.4**	**26.5**
North America										
United States	65.5	64.8	58.9	55.2	56.4	46.4	34.4	28.1	23.4	20.2
Total North America	**65.5**	**64.8**	**58.9**	**55.2**	**56.4**	**46.4**	**34.4**	**28.1**	**23.4**	**20.2**
Latin America										
Brazil	2.3	2.1	2.2	2.2	1.4	0.0	1.4	1.3	1.0	1.4
Argentina	1.0	1.1	1.5	1.5	1.3	0.5	0.3	0.0	0.0	0.0
Total Latin America	**3.3**	**3.2**	**3.7**	**3.7**	**2.7**	**0.5**	**1.7**	**1.3**	**1.0**	**1.4**
Indian Sub-Continent										
India	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Sri Lanka	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
Total Indian Sub-Cont.	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.4**	**0.3**	**0.3**	**0.3**
East Asia										
Japan	62.2	57.8	53.9	47.4	38.0	40.2	35.4	32.4	22.5	20.3
China	4.5	5.7	5.8	6.1	5.4	5.0	4.6	3.7	3.1	2.6
Total East Asia	**66.7**	**63.5**	**59.7**	**53.6**	**43.3**	**45.3**	**40.0**	**36.1**	**25.6**	**22.9**
Oceania										
Australia	2.4	2.3	2.1	1.5	0.1	0.1	0.1	0.1	0.1	0.1
Total Oceania	**2.4**	**2.3**	**2.1**	**1.5**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
CIS										
CIS	3.1	3.0	2.8	2.7	2.6	2.4	2.1	1.8	1.5	1.4
Total CIS	**3.1**	**3.0**	**2.8**	**2.7**	**2.6**	**2.4**	**2.1**	**1.8**	**1.5**	**1.4**
World Total	**213.1**	**204.3**	**192.9**	**178.8**	**160.3**	**142.2**	**117.6**	**101.3**	**79.3**	**72.7**

however, as film demand has already reached a low level. In addition, the growing popularity of photo books, an increasing number of which are made using photo paper, may help to mitigate the falls. There is still, however, considerable scope for further losses in the silver intensive medical sector, and the motion picture sector, which are likely to result in photographic demand commanding a yet lower share of total silver demand going forward.

European offtake fell by just 3% to 26.5 Moz (823 t). This was largely due to the fact that many medical institutions deferred costly conversions to digital systems in the face of funding difficulties, which staunched the flow of silver losses. In addition, some markets, notably the United Kingdom, have already converted to digital, narrowing the scope for further losses. With regard to color negative film, demand for 24 exposure rolls for professional and consumer use fell by 31% (source: Photofinishing News).

In the **United States**, photographic demand fell by 14% in 2010 to reach 20.2 Moz (630 t). Although this was the slowest rate of decline for four years, substitution into digital technology in both the consumer and motion picture segments still proved unstoppable. In the former, demand for 24 exposure films dropped by 35% last year, according to Photofinishing News, although color negative paper fared relatively better, aided by growing demand from online photo studios (which print digital images onto photo paper). In the motion picture industry, the growing number of 3-D films is reported to have encouraged cinemas to convert to digital, which accentuated silver's declines in this area.

Film & Paper Consumption & Photographic Fabrication

	2007	2008	2009	2010	yoy %
Film**	1,371	1,024	751	547	-27.2%
Paper^	1,201	1,094	961	850	-11.6%
Fabrication*	118	101	79	73	-8.3%

**Million of rolls, ^millions square meters, *Moz

Source: Photofinishing News Inc., GFMS

Digital Technology and the Photographic Market

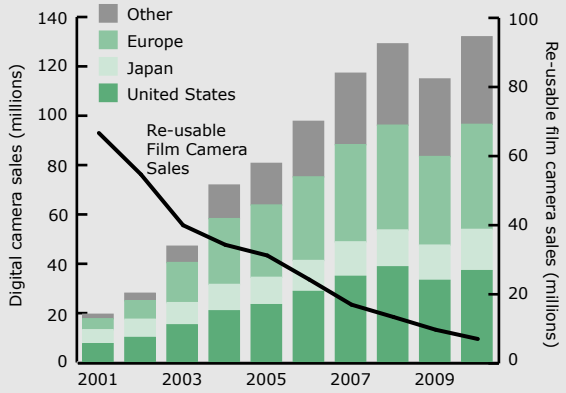
Last year, demand for silver in photographic applications reached its lowest point in at least two decades. The main driver of this downward trajectory has, of course, been the rapid penetration of digital technology in all photo-related areas. Data from industry analysts Photofinishing News illustrates this trend: the uptake of re-usable film cameras fell from over 81 million units in 2000 to barely over 7 million units last year. In contrast, the uptake of digital still cameras (DSCs) soared from around 11 million units to 128 million units in the same time frame.

An analysis of the year-on-year growth in DSC sales, however, shows that these only edged higher by 1%. This is an arguably surprising result, given that the rebound in the global economy would suggest that a healthy revival in demand was in order. Furthermore, the market for DSCs has not yet reached saturation point. Rather, the main reason behind the muted lift in DSCs was stiff competition from cell phone cameras. Cameras in cell phones have almost become standard, and the ease with which users can upload their images online (for sharing on social networking sites, for example) has greatly popularized their use at the expense of DSCs. Within the DSC space, however, there are some notable growth areas, including high definition cameras, 3-D cameras and digital still lens reflex (DSLR) cameras, formerly the preserve of professional photographers.

Growth in these 'high-end' consumer cameras may staunch the pace of decline of silver in photographic applications. Although they do not use silver halide film, they can, however, use photographic paper (which does contain silver). Indeed, the year-on-year slide in photo paper was only 11%, a modest result compared to the 27% fall seen in both 24 exposure film and re-usable film cameras.

Digital technology has also affected demand for silver in commercial applications. The rise of digital radiography has led to reduced offtake for traditional X-ray film, while the motion picture industry is also shifting to digital formats. Graphic art demand for silver has also fallen, as users continue to switch from Computer to Film (CTF) formats (where the computer file is placed onto a photographic film) to digital Computer to Plate (CTP). Looking ahead, therefore, silver demand in photographic applications is not expected to recover, although the pace of decline may decelerate.

Digital and Film Camera Sales



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

Demand for silver in photographic applications in **Japan** fell by 10% last year, in sharp contrast to the 31% drop recorded in 2009. Although offtake declined from all three of the main areas of demand (photographic film, X-ray, and graphic arts), there were a number of factors which cushioned the fall.

Offtake of photo paper, for example, is thought to have remained comparatively stable, in line with steady demand for printing digital images, both at home and professionally. Furthermore, the growing popularity of photo books (using photo paper) also mitigated the rate of decline, and this may come to be a strong area of demand going forwards.

Offtake for photographic film fell heavily, however, in line with declines seen in previous years (averaging 31% over the last five, according to data from Photofinishing News). As well as the ongoing contraction of this market due to the shift into digital, the climbing silver price forced manufacturers to raise prices in many photo-related products and this, combined with persistent yen strength, also hampered demand.

With regard to motion picture film, a number of cinemas deferred expensive conversions to digital, which arrested losses in this sector. Many cinemas proved unable to invest the large amount of capital required, despite the improvement in the macroeconomic situation, in contrast to the expansion in this area seen in the United States.

Silver use in X-rays also declined in Japan last year, as hospitals continued to shift to digital from traditional types. This was encouraged by government policy, which offered financial incentives to hospitals that made the switch. Export-oriented materials destined for emerging

economies, however, registered an increase, as such markets are implementing halide X-rays before digital systems, due to their lower cost.

One of the smaller areas of demand, the graphic arts sector, also showed another year of losses. This migrated to digital at a faster rate than that seen in the other uses, due partly to the fact that some conversions that were deferred in 2009 took place last year. This was enabled by the improvement in the economic backdrop, as well as the loss of a number of smaller outfits which proved economically unviable and were subsequently forced out of the market.

Photographic demand in **China** registered a fall of 15% last year to 2.6 Moz (81 t), with fabrication reflecting the secular declines elsewhere, pushed lower by further inroads towards digital technology. The greatest losses were seen in the consumer and professional film markets as well as in color negative paper, with both areas severely affected by the rapid uptake of low priced digital cameras. The availability of increasingly good quality cameras on most cell phones sold in China also played a primary role in the rapid demise of silver halide film cameras in the domestic market. Despite more photographs being taken in China due to the trivial associated cost, most images are never printed and are instead shared or viewed electronically instead. This trend is expected to be exacerbated as access to personal computers rises across the country. Elsewhere, demand from the medical sector is thought to have been one bright spot last year, boosted by demand for low-end analog X-ray equipment as China's health system continues to undergo a period of rapid expansion.

Jewelry

• ***Jewelry fabrication rose by over 5%, to a five year high, in spite of the near 38% rise in average silver prices.***

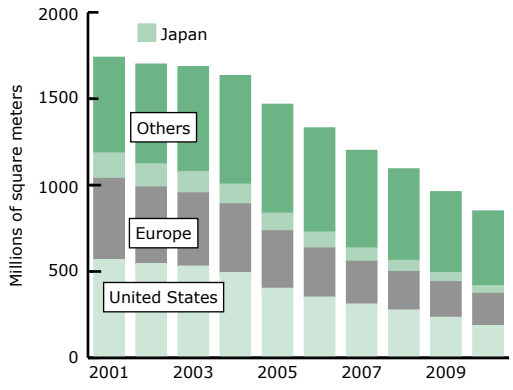
Jewelry fabrication in 2010 rose by 5.1%, its second year of growth after five of losses, to a five year high of 167.0 Moz (5,194 t). The largest single gain was China's 5.1 Moz (157 t) rise, which was mainly due to robust domestic sales. Rising consumption and, for some, higher exports also explain the gains for East Asia's other major producers. That strength flowed through from a rebound in consumption in the industrialized world as it escaped from recession and through substitution from gold. Fabrication in the western world also benefitted from this, with the United States in particular seeing strong gains. Although rising offtake was the norm in 2010, there were some key exceptions, especially India where higher prices caused a swing from strong first quarter gains to heavy fourth quarter losses.

Europe

Jewelry fabrication in Europe rose by 2% last year to 35.2 Moz (1,095 t), its first rise in that decade. This turnaround was largely due to growth in regional consumption, trade destocking coming to a halt and an end to hefty losses for Italy's important export sector.

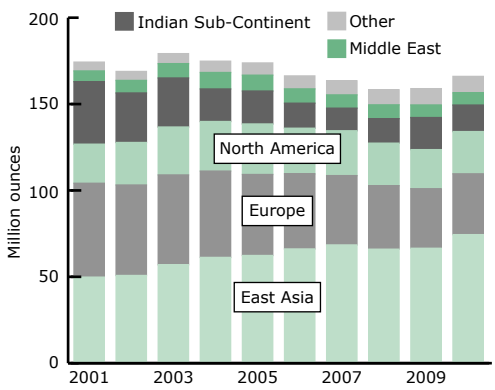
The above noted string of losses was chiefly due to the 43% drop in **Italian** demand from 2001 to 2009, caused by a slump in exports from over 29 Moz (900 t) at the start of the decade to just over 16 Moz (500 t) by 2009. Last year, however, saw an end to heavy losses, with official figures showing a gross weight increase of almost

World Color Photographic Paper Consumption



Source: Photofinishing News Inc.

World Jewelry Fabrication



Source: GFMS

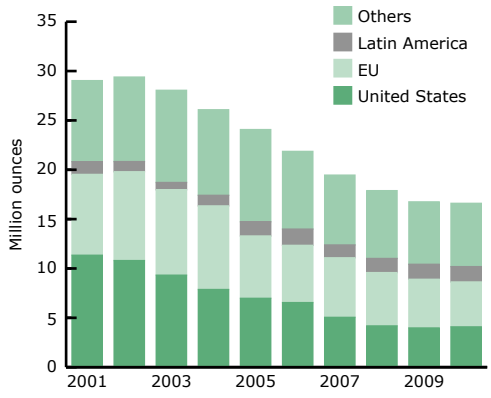
5%. We are doubtful the performance was as robust in fine weight terms and feel broad stability was the real outcome on this basis. That was sufficient to allow a 2% rise last year in Italy's offtake to 21.8 Moz (679 t), a level that keeps the country in third place globally.

The historic losses were mainly due to falling exports to the United States caused by market share loss to rivals and, more recently, falling consumption in that market. However, in 2010, a recovery in US consumption and an end to destocking allowed for slight growth in exports, although their rise undershot US consumption gains, implying further market share loss.

Another reason for the gains not being greater here is that substitution to silver in the US market was typically to high end pieces, thus being great for the value but less so the fine weight. Exports to the Middle East, Latin America and East Asia also rose, with the former up more than 20%. The rise for Hong Kong/China explained the bulk of the increase to East Asia, with gains here thought largely attributable to growing sales of both higher end pieces and chain on spool (usually for the addition of a pendant or another form of labor intensive finishing and then re-export).

Other than a drop for a few miscellaneous markets such as Australia and Turkey, the only area to see notable losses was the EU. Exports to several EU countries fell in 2010 but it was the drop in UK-bound volumes that was most damaging, as they suffered from costume jewelry penetration and aggressive fine weight shaving. The influence of the price on total exports, however, was not thought great but it was noticeable. The year-on-year rise for the first quarter was greater than for the second and third and, while the rise for the fourth may have been just the largest, this masks a poor October-November, felt by some to be caused by price-led order-postponement.

Official Italian Jewelry Exports*



Source: GFMS;* finished pieces only

Italian consumption looks to have grown a little in 2010, reversing some of previous years' losses. However, much of this gain may be only down to retailers cutting gold jewelry stocks and building those in silver due to the impact of precious metal price rises on credit limits; several contacts expressed doubt that actual consumer purchases would have grown as strongly, if at all. Key reasons for gains not being better (here and in other markets) were the challenge from costume jewelry (if less so plain steel), uncertain economic prospects and ongoing structural change (such as a shift to branded or gemset).

A healthier economy and a greater enthusiasm for the metal meant that jewelry consumption in **Germany**, Europe's largest market, was more robust. Unfortunately, the true scale of the gain is clouded by suspect figures for imports, particularly those from Thailand (which along with China/Hong Kong dominate local sales). Exports of both finished and semi-manufactured jewelry pieces also rose in 2010 (the former in gross weight terms by 28%). Combined, this generated a rise of 3% in the country's silver jewelry fabrication to 3.8 Moz (118 t).

The **French** silver jewelry market in 2010 was of interest as, up until the summer, consumption gains of 10-20% were expected. However, by year-end the rise had been cut to little more than 5%. Our contacts felt that, to some extent, this was due to silver's price rise but, to a greater extent, the mass introduction by chain stores in shopping malls of 9-karat gold into a market previously a virtual 18-karat monopoly. However, this still left room for an 11% rise in local silver jewelry fabrication.

UK silver jewelry consumption rose by around 5% last year, partly because of gains at the expense of karat gold. Both major and independent retailers continued to substitute 9-karat gold, in particular, for sterling silver. In addition, as in the United States (see overleaf), demand increased notably for charm bracelets, the bulk of which was serviced by imports, principally from East Asia.

Russian silver jewelry fabrication rose by over 18% to 3.5 Moz (109 t) in 2010. There was also evidence of a rise in jewelry imports, although it appears as though Italy gained some market share from Turkey (see

Table 8a - Silver Fabrication: Jewelry and Silverware (including the use of scrap - million ounces)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Europe										
Italy	49.4	46.9	45.3	43.4	39.5	35.2	32.2	27.9	25.1	25.0
Germany	8.7	7.9	7.7	7.3	6.8	6.8	6.5	6.2	5.3	5.4
Poland	2.5	2.3	2.9	3.1	3.4	3.6	3.2	3.1	2.4	2.5
Other Countries	17.8	16.3	15.9	14.6	13.4	12.8	11.4	11.2	10.1	9.9
Total Europe	**78.4**	**73.3**	**71.8**	**68.3**	**63.1**	**58.4**	**53.4**	**48.3**	**43.0**	**42.8**
North America										
United States	13.0	13.7	15.1	15.4	15.7	15.0	14.2	13.0	11.6	12.9
Mexico	12.9	14.0	15.6	16.2	16.4	14.0	13.6	13.0	12.0	12.3
Canada	1.5	1.5	1.7	1.6	1.4	1.2	1.1	1.0	0.9	0.9
Total North America	**27.4**	**29.3**	**32.4**	**33.2**	**33.5**	**30.1**	**28.9**	**26.9**	**24.6**	**26.1**
Latin America										
Total Latin America	**4.1**	**3.9**	**4.0**	**4.3**	**4.6**	**5.0**	**5.0**	**5.1**	**5.4**	**5.7**
Middle East										
Turkey	5.3	6.8	7.9	8.7	8.3	7.2	6.2	6.7	5.6	5.1
Other Countries	6.7	6.4	6.6	7.0	7.0	6.9	7.0	6.7	6.2	6.2
Total Middle East	**11.9**	**13.2**	**14.5**	**15.7**	**15.3**	**14.1**	**13.2**	**13.4**	**11.8**	**11.3**
Indian Sub-Continent										
India	88.4	61.7	61.7	35.4	37.6	28.2	24.9	26.9	39.2	30.2
Bangladesh & Nepal	5.9	4.8	4.5	4.2	3.7	3.6	3.6	3.7	3.6	3.5
Other Countries	1.7	1.7	1.7	1.9	1.9	1.9	1.9	1.9	1.9	1.7
Total Indian Sub-Cont.	**96.1**	**68.2**	**67.9**	**41.5**	**43.3**	**33.8**	**30.5**	**32.5**	**44.7**	**35.4**
East Asia										
China	11.5	14.3	17.1	20.5	22.6	26.2	29.5	29.8	30.9	36.5
Thailand	32.7	32.3	36.2	36.9	36.8	36.8	36.5	33.3	30.4	30.5
South Korea	4.6	4.5	4.6	4.7	4.7	4.8	4.9	4.8	4.8	5.4
Indonesia	4.7	4.0	4.1	5.2	4.5	5.1	4.8	4.8	4.7	5.3
Other Countries	5.1	5.1	5.1	5.4	5.8	5.7	5.9	5.8	5.9	6.4
Total East Asia	**58.6**	**60.1**	**67.2**	**72.7**	**74.4**	**78.6**	**81.6**	**78.6**	**76.7**	**83.9**
Africa										
Total Africa	**1.1**	**1.1**	**1.2**	**1.2**	**1.2**	**1.2**	**1.3**	**1.3**	**1.2**	**1.2**
Oceania										
Total Oceania	**0.7**	**0.8**	**0.7**	**0.8**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**
CIS										
Russia	1.4	1.8	2.6	3.6	4.4	4.6	6.6	7.8	8.5	9.5
Other Countries	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.7	0.8
Total CIS	**2.0**	**2.4**	**3.3**	**4.3**	**5.2**	**5.4**	**7.4**	**8.6**	**9.1**	**10.3**
World Total	**280.3**	**252.3**	**263.1**	**242.0**	**241.4**	**227.3**	**222.0**	**215.4**	**217.1**	**217.4**

Jewelry & Silverware

GFMS have continued the joint presentation of jewelry and silverware even though we began reporting the two separately five years ago. The aggregate share of the two, which accounted for about a third of total fabrication a decade ago, declined further last year to 25% (individually, jewelry and silverware accounted for 19% and 6% respectively). The ongoing decline was led by silverware, where secular changes, mainly in the industrialized world, and escalating silver prices elsewhere curbed offtake. In fact, last year's losses were solely attributed to silverware, as jewelry fabrication rose by 5%. The better performance of silver jewelry in 2010, as well as in recent years, has partly been due to substitution gains at the expense of karat gold in western markets (as a result of rising gold prices) and the emergence of the 'fashion' jewelry segment in China and India.

below). Overall, the much improved economy, along with further substitution gains at the expense of 14-karat gold, contributed to the robust increase in Russian silver jewelry demand in 2010, both for plain items and also gemset pieces.

North America

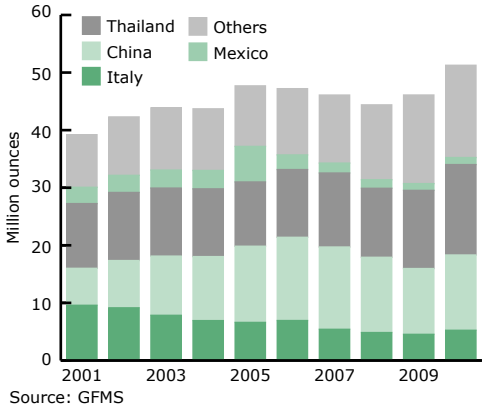
The growth last year in **US** silver jewelry fabrication, of 12%, should not detract from what was an extremely challenging US retail sector. In addition, the performance of the country's silver jewelry market remained linked to developments in the gold jewelry segment, which has been the case over the past two to three years.

Against a backdrop of elevated and often record gold prices, retailers have struggled to create a karat gold product at lower price points (ranging from $49 through to $199 at retail). This difficulty encouraged the trade to replace karat gold with sterling silver pieces, in a variety of formats. This trend was started by the major retailers and initially concentrated on silver bonded to gold, first introduced in a 90:10 (silver:gold) variant, but which more recently migrated to a 95:5 product. Faced with mixed success (partly because of confusion among the wider public, as well as concerns relating to the product's longevity, especially with a thinner gold plating), the trade began to increasingly focus on sterling silver, which gathered pace last year, along several channels.

Firstly, the independent sector increasingly replaced gold in the retail showcase with sterling silver. This segment had initially resisted the white metal, having perceived it as a downgrade, but the growth (secondly) of branded and private label products encouraged an increasing number of independent and small chain outlets to make the switch in favor of silver. The rise in this category has also encroached on a number of traditional strongholds of the yellow metal, including the chain and wedding and engagement ring categories. Finally, the charm bracelet segment achieved healthy sales growth in 2010. For the retail segment, this product was hugely beneficial, not only because of the low entry price point, which drew in a cost conscious public, but also because of the repeat business it generated as consumers frequently returned in order to build their collection of charms.

Even though sterling silver jewelry fabrication did improve last year, the rise in silver prices resulted in a shift towards lighter products, in spite of the higher margins

US Official Silver Jewelry Imports



Source: GFMS

that silver jewelry attracts at the retail level, compared with gold. The focus box on page 70 highlights some of these trends, but the sterling silver cuff captures two prominent strategies, namely the propensity to show more skin and the increasing use of semi-precious stones (diamonds have also been increasingly employed). Although these developments broadened the appeal of sterling silver, they also partially offset the growth in unit sales, resulting in a smaller improvement in the associated metal content.

Mexican jewelry fabrication last year recovered nearly all the ground it lost in 2009. High and rising local silver prices to some extent dampened local demand but this was partly compensated by further gains at the expense of karat gold jewelry, which has become simply too unaffordable for the mass market outside of the bridal sector. Exports also rebounded in 2010, although the increase in shipments to the all-important US market was limited (in volume terms at least), due to severe price competition from lower-cost manufacturers in Thailand, India and China.

Middle East

The 9% decline in **Turkish** jewelry fabrication last year was due to weaker offtake both for the local and export sectors. Taking each in turn, the domestic market was affected by higher silver prices (particularly during the final five months of 2010), together with growing import competition from lower cost countries, especially China, which appears to have taken market share from Thailand (now perceived as being relatively expensive compared with Chinese merchandise). In terms of the export segment, silver jewelry shipments were some 7% lower in 2010. This owed much to a sharp drop in deliveries to

Consumer Trends and Jewelry Consumption

The consumption of silver jewelry in its main markets of the industrialized world is understood to have risen last year, perhaps by just over 5%. This stands in sharp contrast to gold, as these markets typically saw losses in a range of 10-15%. This divergence cannot be attributed specifically to the year-on-year change in the price as gold's rise of 26% was far lower than silver's 38% jump. Nonetheless, it seems fair to argue that gold's absolute price level had become more critical, as substitution to silver showed little sign of easing. It was not a one-way street for silver as some consumers also migrated down to steel and other forms of costume jewelry. However on balance, losses to the latter appear to have been outweighed by gains from gold. This was different to the situation in 2009, as the industrialized world's escape last year from recession enabled expenditure on lower-middle and mid-market pieces, the niches silver occupies, to rise.

One reason that costume jewelry did not account for more consumer expenditure is that many a contact noted interest in jewelry that appeared to have tangible value, rather than being totally disposable, a change they attributed to background talk about the wisdom of investment in precious metals. More importantly for silver, there was no sign of the metal merely becoming just a substitute for hard times as its own attractions remained strong, still being perceived in many markets as more youthful and fashionable than gold. One reason for this is consumer preference for color within jewelry, where two themes dominate. The first is a requirement for discretion in economically uncertain times and this has favored the 'white look' over the yellow, making silver one of its beneficiaries. However, a second has been an interest in vintage, which has given support to rose gold jewelry, although silver has received some benefit from sales of new styles of artificially aged pieces.

It has not been all good news for silver, however, as the structural trends that many jewelry markets have seen for the last decade or so continued in 2010. These changes include a shift from plain to gemset, from heavy to light accessory items and from simple, unbranded pieces to high design, branded designs. These shifts are crucial as they undermine the fine weight of metal sold. As an example of a continuation of these trends, sales in France of plain silver jewelry (in terms of pieces) fell by 2% in 2010, while gemset rose by 17% (figures courtesy of Société 5). There also appears to have been a change as regards manufacturers' attitudes to weights last year as we saw, arguably for the first time, concerted efforts to reduce silver weights by pushing designs that used less silver, a good example being open-work styles that convey size but show skin.

The shift to branded, however, was not uniformly unhelpful for silver as there were growing signs of greater interest in silver by the brands. Some steel jewelry producers were seen to upgrade to silver as the above noted desire for the real ranked higher in importance than the still modest absolute cost of silver per piece. Similarly, some new upper-mid market clothes brands entered the jewelry market as a means of diversification and silver was typically the metal of choice in the balance of image versus price points. Lastly, the image of silver in some markets was boosted by brands who previously had only made gold jewelry adding silver lines in order to meet their (comparatively elevated) price points.

The benefits of some of the above can be overstated as regards the fine weight of silver sold as they often did more to raise the value of silver jewelry sales. This did not apply in all markets but it seems that the rise in the weight of silver jewelry sold continued to be easily outstripped by the growth in the value of sales in the United States.

Illustrations of Recent Trends

left: Panos Konidas sterling silver earrings, above left: Raymond Hak Couture sterling silver cuff with diamonds and chalcedony (photos courtesy of Savor Silver), above right: sterling silver openwork pendant with gold-plate detail by Better Silver.

Right: sterling silver and marcasite ring by Nanis (photo courtesy of Vogue Gioiello), above: silver link bracelet by www.jewellery.me.

Russia, where a rise in local fabrication appears to have taken market share from imports. This outcome was only partially offset by higher exports to the United States, itself a reflection of Turkish karat gold manufacturers having diversified into sterling silver products.

The modest decline in **Egyptian** jewelry fabrication last year owed much to growing import competition, which continued to take market share. Overall, therefore, it appears as though jewelry consumption was little changed on 2009, largely because a fairly robust start to the year was offset by a weaker second half, as local silver prices rose to a series of record highs.

Indian Sub-Continent

Indian jewelry fabrication dropped by 20% last year to 12.5 Moz (390 t), which came to around a third of the 1993 peak. The secular decline in traditional jewelry offtake has been the chief cause for driving fabrication lower for nearly two decades but this was not the main reason behind last year's fall. A significant increase in trade inventory had provided a massive boost to fabrication in 2009, resulting in an apparent year-on-year drop in 2010. (For more on 2009's stock buildup see *World Silver Survey 2010*.) In fact, we believe that consumption in 2010 was up quite strongly, mainly due to the growth in fashion jewelry sales. There were no notable changes in trade stocks last year.

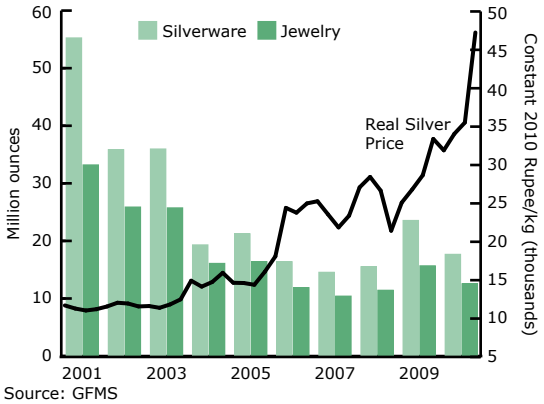
Last year saw the consumption of heavy traditional items, which account for roughly 90% of the total jewelry offtake by weight, remained more or less stable. It appears that the strength of the rural economy was favorable following a good monsoon season, although savings were burdened by the high level of inflation. Retailers noted that buying had remained fairly healthy until October when the rupee silver price was still around Rs. 35,000/kg, up about a third year-on-year. However, sales tumbled towards the year-end, in response to the sharp price rise, nearly offsetting earlier gains. The average rupee silver price in December was already over a quarter higher from October and 60% up year-on-year.

By contrast, lightweight fashion jewelry demand rose sharply. The convergence of favorable demographics and affordable price points in a growing economy has proved to be the key driver of demand for this segment. GFMS research trips across the country last year revealed that the growth in fashion jewelry has been mirrored by an increase in the retail space devoted to this sector. Perhaps equally important have been the design innovations by the trade, given the associated high margins on such pieces. There was significant interest in studded fashion jewelry, particularly pieces imitating the karat gold gemset and diamond jewelry styles. Often, these 'high-end' silver jewelry pieces are plated with gold and rhodium to complete the 'yellow' and 'white' look. Moreover, diamonds were also seen set in silver, which offered a more affordable substitute for white gold or platinum. This move, although at a nascent stage, protected both retail price points as well as profit margins. Silver jewelry exports in fine ounce terms were up substantially last year, a result of the substitution of gold for silver in western markets.

East Asia

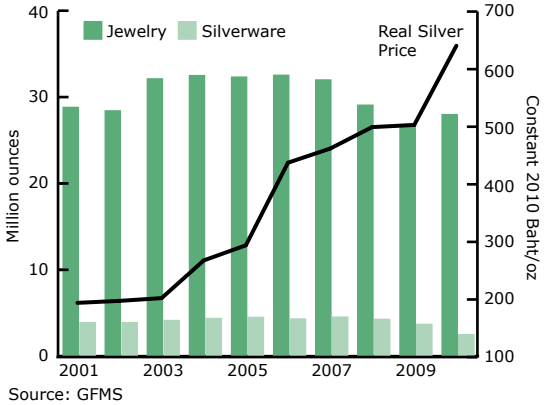
Despite a modest increase in fabrication volumes in 2010 (the first in three years), **Thailand** lost its position as the world's largest silver jewelry market to China. GFMS estimate that Thailand's jewelry fabrication inched higher in 2010, rising nearly 5% to 28.0 Moz (870 t) as export demand, while far from robust, did improve on the low

Indian Jewelry and Silverware Fabrication



Source: GFMS

Thai Jewelry and Silverware Fabrication



Source: GFMS

Table 8 - Silver Fabrication: Jewelry (including the use of scrap - million ounces)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Europe										
Italy	37.2	36.7	35.7	34.2	31.5	28.2	25.8	22.6	21.3	21.8
Germany	3.7	3.3	3.6	3.7	3.8	3.8	3.9	3.9	3.7	3.8
Poland	2.4	2.2	2.8	3.0	3.3	3.5	3.2	3.0	2.4	2.4
France	2.5	2.4	2.4	2.0	1.5	1.6	1.7	1.6	1.7	1.9
Spain	1.4	1.5	1.7	1.4	1.4	1.3	1.1	1.1	1.2	1.1
Portugal	1.6	1.4	1.5	1.4	1.2	1.1	1.0	1.1	1.0	1.0
Greece	1.0	0.9	1.0	1.0	1.1	1.1	1.0	1.2	1.0	0.9
UK & Ireland	2.5	1.8	1.2	1.2	1.0	1.0	0.5	0.4	0.4	0.4
Sweden	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3
Switzerland	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Denmark	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
Cyprus & Malta	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Norway	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Finland	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Austria	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Other Countries	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.6	0.6
Total Europe	**54.3**	**52.4**	**52.0**	**50.0**	**46.9**	**43.4**	**40.1**	**36.7**	**34.5**	**35.2**
North America										
United States	10.9	11.8	13.4	13.8	14.1	13.5	12.9	12.0	10.7	12.0
Mexico	10.4	11.5	13.0	13.6	14.0	12.0	12.2	11.8	11.1	11.6
Canada	1.3	1.3	1.4	1.4	1.2	1.0	0.9	0.8	0.8	0.8
Total North America	**22.6**	**24.6**	**27.7**	**28.7**	**29.3**	**26.4**	**26.0**	**24.6**	**22.6**	**24.5**
Latin America										
Brazil	1.0	1.0	1.2	1.3	1.4	1.5	1.5	1.5	1.7	1.9
Peru	0.4	0.4	0.3	0.3	0.3	0.4	0.3	0.4	0.5	0.5
Argentina	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.2	0.3
Colombia	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Ecuador	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
Other Countries	0.7	0.6	0.7	0.9	1.1	1.2	1.2	1.4	1.7	1.7
Total Latin America	**2.7**	**2.5**	**2.8**	**3.1**	**3.4**	**3.7**	**3.7**	**4.0**	**4.4**	**4.8**
Middle East										
Turkey	3.0	4.1	5.0	6.0	5.7	4.8	4.1	4.5	3.9	3.5
Egypt	1.3	1.2	1.4	1.5	1.4	1.3	1.4	1.3	1.2	1.1
Saudi Arabia	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7
Israel	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4
Other Countries	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.4
Total Middle East	**6.2**	**7.3**	**8.3**	**9.5**	**9.2**	**8.3**	**7.7**	**8.0**	**7.3**	**7.1**
Indian Sub-Continent										
India	33.2	25.9	25.7	16.1	16.4	11.9	10.4	11.4	15.7	12.5
Bangladesh & Nepal	2.2	2.0	1.9	1.9	1.8	1.7	1.8	1.9	1.9	1.9
Other Countries	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	1.0	0.9
Total Indian Sub-Cont.	**36.2**	**28.7**	**28.4**	**18.8**	**19.0**	**14.5**	**13.1**	**14.2**	**18.6**	**15.3**
East Asia										
China	8.8	11.0	13.1	15.6	17.4	20.2	22.9	23.6	26.2	31.2
Thailand	28.8	28.4	32.1	32.5	32.3	32.5	32.0	29.1	26.7	28.0
South Korea	3.8	3.8	3.9	4.0	3.9	4.0	4.2	4.1	4.2	4.7
Indonesia	4.1	3.3	3.5	4.5	3.7	4.4	4.2	4.2	4.2	4.7

Table 8 - Silver Fabrication: Jewelry (including the use of scrap - million ounces)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Japan	1.6	1.6	1.5	1.8	2.0	1.9	2.1	2.0	2.1	2.2
Vietnam	0.7	0.8	0.8	0.9	0.9	1.0	1.1	1.2	1.2	1.4
Myanmar, Laos & Cambodia	0.6	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.7
Malaysia	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Hong Kong	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
Taiwan	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Other Countries	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total East Asia	**49.8**	**50.8**	**57.0**	**61.2**	**62.3**	**66.1**	**68.5**	**66.0**	**66.5**	**74.4**
Africa										
Morocco	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2
Tunisia	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Algeria	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other Countries	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3
Total Africa	**0.9**	**0.9**	**0.9**	**0.9**	**0.9**	**0.9**	**1.0**	**1.0**	**0.9**	**0.9**
Oceania										
Australia	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.7
Total Oceania	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**
CIS										
Russia	0.4	0.6	0.9	1.2	1.5	1.6	2.3	2.5	3.0	3.5
Other Countries	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.6
Total CIS	**0.9**	**1.1**	**1.4**	**1.8**	**2.1**	**2.2**	**2.9**	**3.1**	**3.5**	**4.1**
World Total	**174.3**	**168.9**	**179.2**	**174.8**	**173.8**	**166.3**	**163.5**	**158.3**	**158.9**	**167.0**

levels witnessed in 2009 at the height of the economic collapse. On the domestic front, demand for branded silver, in part as a more affordable alternative to gold, boosted offtake although silver jewelry is still not highly regarded outside the youth demographic. Moreover, retail sales volumes remained at modest levels, apart from department stores in urban centers aimed at the middle classes and the tourist trade.

To imply that the Thai silver market in general performed well last year would be slightly misleading. Those fabricators producing high-end quality products for the export markets (either branded plain or high quality stone set) did indeed witness an improvement in orders and an overall rise in production volumes. However, at the lower end of the market (small plain items or stone set around the two to three dollar per piece range), the rising silver price had a detrimental impact, with several smaller fabricators failing to manage rising cash flow pressures as metal costs rose, forcing several to close operations and liquidate stock. In the first half of 2010 GFMS estimate fabrication demand jumped 18% year-on-year, with the first quarter almost 25% stronger then the corresponding period in 2009 when global economic conditions were close to their worst. In contrast, the second half saw fabrication volumes wane as silver prices accelerated, slipping 5% in the final six months in what normally is the busiest trading period for Thai fabricators as they meet export orders for Christmas and spring sales in the northern hemisphere.

In addition to the rising price, a strong domestic currency (the Thai baht rose almost 10% against the greenback in 2010) added further pain as the vast majority of transactions for the export trade are conducted in US dollars, with most fabricators unable to pass on the additional costs due to competition pressures, forcing most to absorb the exchange losses. This was in addition to rising production costs, higher metal losses, and increased overheads due to rising inflation, which combined, had a significant effect on gross margins.

Thailand's traditional export markets were mixed last year. A large proportion of trade is still focused on the US market as Thailand still benefits under the Generalised System of Preferences (GSP) for silver jewelry (due to be reviewed in April 2011), with GFMS estimating that exports to this critical market rose by

close to 16% last year. In contrast, shipments to western Europe remained weak with further falls recorded to Germany and Italy. Field research last year discovered that shipments to China were sharply higher last year although VAT and import tariffs limited potential margins. This has generated an increase in the hand carried trade (unofficial) into mainland China from Hong Kong. Thailand also relies heavily on the backpacker trade where wholesalers travel to Bangkok to purchase jewelry and then hand carry it back to their country of origin. This vital business (which is mainly at the low end of the market) was severely affected by the political protests in Thailand last year, with buyers cancelling trips due to the unrest.

Following a modest rise in 2009, demand in **South Korea** for silver used in jewelry fabrication jumped almost 13% last year to 4.7 Moz (148 t), with the robust growth entirely a product of increasing domestic demand as exports of finished and semi finished jewelry (once a mainstay of Korean fabrication) continued to decline. The weakness in the gold jewelry sector last year (itself a function of higher prices) encouraged several fabricators to switch entirely from gold to silver or increase production of silver jewelry at the expense of the yellow metal, as retailers looked to increase allocation of space to the more affordable precious metal. Consumers, led by the youth demographic, have accepted silver as a fashion alternative to gold and apart from traditional occasions such as weddings and births, where gold is still widely purchased (if now at lower volumes), end-users in the main are accepting of silver as a viable substitute.

GFMS estimate **Indonesian** silver jewelry fabrication ended 2010 up over 13%. This was chiefly driven by strong domestic consumption growth as genuine exports remained brittle for much of the year. Much of the robust rise can best be explained by substitution gains (at the expense of gold) as consumers shied away from the sharply higher entry point of gold jewelry last year. Field research to Surabaya and other regional fabrication centers last year revealed that several gold fabricators had migrated to silver or have, at the very least, added silver to their production lines. Moreover, jewelry designs appear to be replicating the more costly gold alternatives which obviously appeal to the budget conscious consumer. As mentioned, genuine exports remained weaker last year although it should be noted that the backpacker trade (chiefly out of Bali) recorded strong gains fuelled mainly by increased offtake from Australia. Amid an environment of surging precious metals prices in 2010, **Chinese** silver jewelry demand expanded robustly by 19% to 31.2 Moz (971 t). This made China the world's largest fabricating nation, eclipsing its closest rivals, Thailand and Italy.

The increase in fabrication last year was a combination of two main factors. First, a strong uptick in domestic consumption, led by the surging economy (China's economy grew at 10.3% in 2010), enabled greater access to modern designs through stand alone retail outlets and internet shopping sites. Second, there was a rise in export demand, with China's low labor costs and improved quality providing a winning formula in gaining market share at the expense of its rivals. GFMS estimate that deliveries to the United States last year (easily the largest export market) jumped by 14%, while exports to Europe were also up strongly. A further supportive factor came from high gold prices, which saw silver make some substitution gains to the yellow metal's detriment.

The relatively low cost of stocking a retail showroom (in comparison to gold) has seen an explosion of new stand alone fashion jewelry outlets across China's smaller cities. The popularity of 'white' jewelry among the younger demographic has seen consumers look to silver as a more affordable alternative to the white look of 18-karat white gold and platinum, with intricate designs (mainly seen in 18-karat jewelry) often replicated in silver and sold at a fraction of the cost. Moreover, aggressive marketing campaigns and promotions in these new markets have lifted silver's profile as a fashion alternative, with the lower price point attracting budget conscious consumers.

In terms of trends last year, demand has continued to move away from plain traditional styles that once dominated the market to light, high design, stone set items. Branded jewelry is gaining in prominence (particularly in China's major cities) although the vast bulk of sales are still dominated by low cost products for the accessory market. Moreover, the cost of the metal has yet to have a major impact on consumption (the Chinese RMB silver price rose 34% last year), with some of this hefty increase absorbed by the healthy margins enjoyed at the retail level. Fabrication demand in early 2011 appears on track for further robust gains, despite silver averaging over 6.5 RMB per gram to mid-March.

Table 9 - Silver Fabrication: Silverware (including the use of scrap - million ounces)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Europe										
Italy	12.2	10.1	9.6	9.1	8.0	7.1	6.4	5.3	3.8	3.2
Germany	5.0	4.5	4.1	3.5	3.0	2.9	2.7	2.3	1.6	1.6
Greece	2.1	1.9	1.9	1.7	1.5	1.4	1.2	1.0	0.8	0.6
Norway	1.3	1.1	1.1	1.0	0.9	0.9	0.6	0.7	0.5	0.5
Sweden	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3
Denmark	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Other Countries	2.7	2.5	2.3	2.1	2.0	1.8	1.6	1.6	1.2	1.2
Total Europe	**24.1**	**20.9**	**19.8**	**18.3**	**16.2**	**14.9**	**13.3**	**11.5**	**8.5**	**7.6**
North America										
United States	2.1	1.9	1.8	1.6	1.5	1.4	1.4	1.0	0.9	0.8
Mexico	2.4	2.5	2.7	2.6	2.5	2.0	1.4	1.2	0.9	0.6
Canada	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1
Total North America	**4.8**	**4.7**	**4.7**	**4.5**	**4.3**	**3.6**	**2.9**	**2.3**	**1.9**	**1.6**
Latin America										
Colombia	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2
Peru	0.5	0.5	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
Other Countries	0.6	0.6	0.5	0.6	0.7	0.7	0.7	0.7	0.6	0.5
Total Latin America	**1.4**	**1.4**	**1.2**	**1.2**	**1.2**	**1.3**	**1.3**	**1.2**	**1.0**	**0.9**
Middle East										
Turkey	2.3	2.7	2.9	2.8	2.6	2.4	2.1	2.2	1.8	1.6
Israel	1.4	1.4	1.4	1.4	1.5	1.5	1.4	1.3	1.1	1.0
Egypt	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
Other Countries	1.7	1.5	1.6	1.7	1.7	1.7	1.7	1.7	1.5	1.4
Total Middle East	**5.7**	**5.9**	**6.2**	**6.2**	**6.1**	**5.8**	**5.5**	**5.4**	**4.5**	**4.2**
Indian Sub-Continent										
India	55.2	35.8	35.9	19.3	21.2	16.4	14.5	15.5	23.5	17.7
Bangladesh & Nepal	3.7	2.8	2.6	2.3	1.9	1.9	1.9	1.8	1.7	1.6
Other Countries	0.9	1.0	1.0	1.0	1.1	1.1	1.0	1.0	0.9	0.8
Total Indian Sub-Cont.	**59.9**	**39.6**	**39.5**	**22.6**	**24.2**	**19.3**	**17.4**	**18.4**	**26.1**	**20.0**
East Asia										
China	2.7	3.3	3.9	4.8	5.2	6.1	6.5	6.3	4.7	5.3
Thailand	3.9	3.9	4.1	4.4	4.5	4.3	4.5	4.3	3.7	2.5
South Korea	0.8	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.6	0.6
Indonesia	0.6	0.7	0.7	0.8	0.8	0.7	0.6	0.6	0.6	0.6
Other Countries	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.6
Total East Asia	**8.8**	**9.3**	**10.2**	**11.4**	**12.0**	**12.5**	**13.2**	**12.6**	**10.2**	**9.5**
Africa										
Africa	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total Africa	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**	**0.3**
Oceania										
Oceania	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Oceania	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
CIS										
Russia	0.9	1.2	1.7	2.4	2.9	3.0	4.3	5.2	5.5	6.0
Other Countries	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total CIS	**1.1**	**1.3**	**1.9**	**2.5**	**3.1**	**3.2**	**4.5**	**5.4**	**5.7**	**6.2**
World Total	**106.1**	**83.5**	**83.9**	**67.2**	**67.6**	**61.0**	**58.5**	**57.1**	**58.2**	**50.3**

Silverware

• ***A combination of price related and secular losses contributed to the near 14% fall in global silverware fabrication last year.***

In 2010, world silverware fabrication recorded its largest fall in six years, in both absolute and percentage terms, declining by 13.5% to 50.3 Moz (1,566 t). Every region, aside from the CIS, saw its output fall last year. In addition to the long-term secular decline in many western countries, the jump in silver prices led to a marked drop in demand in the price sensitive markets, especially in India, the largest fabricator of silverware products.

Europe

Silverware offtake in 2010 in Europe fell by 10% last year to 7.6 Moz (237 t). This might come as no surprise given the structural decline in place for many years (2010 volumes were only 32% of 2001's). However, until mid-year, many producers were hoping for stable output. This should not be taken as a sign that the long run slide was drawing to a close; instead, it reflects a comparison against a disastrous 2009, with its heavy destocking. Indeed, early projections for 2010 of stability equated to around 20% down on 2008, a change in line with the long term trend. Prospects deteriorated after the summer, however, as a result of the rise in silver prices. There was initially an element of order postponement but even a late pre-Christmas rush for some could not undo this. Losses were again greatest for heavier, traditional pieces, while lighter, more modern designs fared better. It even seems probable for instance that photoframe output rose a little.

The bulk of losses took place in **Italy**, with its 17% drop. Its export statistics suggest a good recovery but industry sources are sceptical of that and imports as reported by destination show Italian exports were stable. Losses were therefore focused on domestic sales as consumer purchases fell, retailers failed to restock and manufacturers reduced work-in-progress.

North America

Silverware fabrication in the **United States** last year suffered another fall, although the extent of the decline, a drop of some 6% to 0.8 Moz (26 t), was far less severe than in recent years. However, this was more a reflection of what has been a 15-year period of uninterrupted losses in the US silverware industry, which has suffered both from a secular change in consumer tastes (away from solid silverware sets), and growing import competition (for example in the photo frame sector which is serviced by imported, rather than domestically produced, pieces).

Middle East

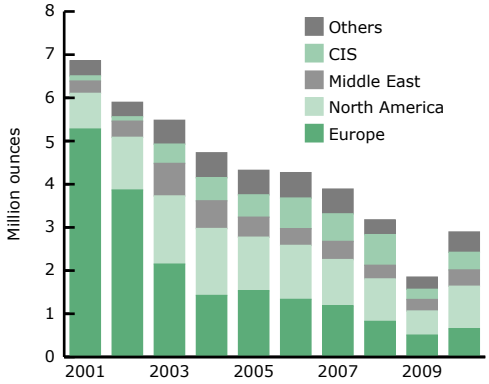
Last year witnessed a further drop in **Turkish** silverware offtake, although this was less severe than the recession induced decline of 2009. Even though economic growth rebounded strongly last year, the rise in local silver prices, particularly during the second half, to a series of record highs, adversely impacted the market, which continued to migrate towards lightweight and small products. Demand in **Israel** for silverware also retreated last year, by an estimated 7%. Increased silver prices saw domestic demand for Judaic items soften as consumers waited for prices to retrace, while exports were also weaker as a result of fragile economic conditions in the largest export market, the United States.

Indian Sub-Continent

Indian silverware fabrication fell 25% last year to 17.7 Moz (549 t). This was not driven by a decline in retail consumption but was entirely on account of the comparison against 2009's strong manufacturing that was mainly led by high trade stocking rather than final consumption. (For more on trade stocking in 2009, refer to *World Silver Survey 2010*.) If we strip out the inventory build up from total fabrication in 2009, last year saw steady offtake as wedding demand for silverware remained healthy (trade stocks were largely unchanged).

Wedding demand can be taken as fairly price inelastic, although this usually holds true more for gold than silver simply because of the relative lack of 'customary compulsions' attached to the latter. Nonetheless, last

Italian Silverware Exports



Source: GFMS

year saw buoyant wedding purchases of heavy traditional items such as dining sets, as well as other forms of gifting. The trend of giving silver articles along with wedding invitations was the most noted feature of the business last year. Earlier, such gifting was mainly limited to family, but the practice has become more widespread in recent times. Fabricators mentioned that novel items such as almonds, currency notes and key chains, weighing anywhere between 0.3 to 3.0 ounces (10-100 grams) were given per invitation, and averaging 1.6 ounces per wedding. Given high silver prices and the fact that such gifting is viewed as ostentatious rather than customary, this was confined to the wealthier classes.

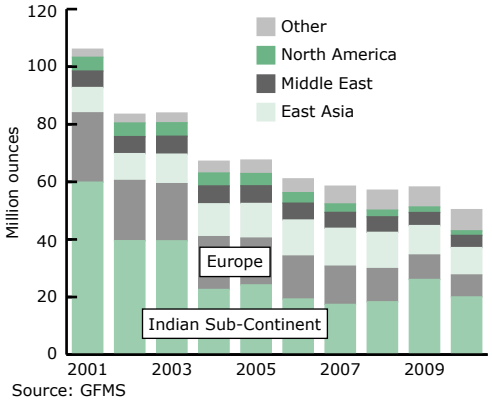
Outside of wedding purchases, retailers mentioned that offtake of heavy traditional items remained poor, particularly after the rupee price rose above Rs. 35,000/kg post-October, with sales shifting to lighter items. Gifting here suffered due to high prices and competition from consumer durables such as electronics. However, corporate (bulk) orders were notable last year and, although these were quite intermittent, they appeared to have mitigated losses elsewhere. Indeed, during our research meetings, we came across some retailers who registered growth, in varying modest degrees, thanks to large and/or multiple corporate orders.

GFMS meetings with fabricators revealed another interesting development in the market last year. Trade contacts mentioned that for the first time investors were exchanging silver bars for fabrication of silver utensils. Although the scale of such mobilization of bars held as investment for fabrication was negligible last year, given the magnitude of the recent acquisitions by investors, this practice could become significant, especially if the silver price continues to rise.

East Asia

Silverware fabrication in **Thailand** suffered another pronounced drop in 2010, declining by almost a third to 2.5 Moz (77 t) or only 45% of the level recorded in 2007. Much of the acute fall over the last few years can be blamed on structural changes in key export markets, such as gifting silverware at weddings and the decline of formal dining. In addition, the acceptance of lighter designs has also proven detrimental to the industry. In 2009, the economic crisis that enveloped most western markets added further downwards pressure as demand for heavy items such as serving trays and cutlery dropped

World Silverware Fabrication



Source: GFMS

acutely as corporate customers and private consumers reined in spending. This trend carried over into last year, with a significant drop in fabrication recorded in each quarter. Moreover, sharply higher silver prices in the second half served only to accentuate the lack of export demand, virtually stalling fabrication in the final months.

After falling by almost 25% in 2009, **Chinese** silverware fabrication returned to growth last year, up almost 11% to 5.2 Moz (163 t) although it remained 16% below 2008 and almost a fifth below the peak in 2007. Combined exports from China and Hong Kong (the vast majority of Chinese fabrication for foreign markets is shipped via Hong Kong) were up sharply last year according to official trade statistics although GFMS conclude that these figures may be inflated due to the incorrect application of tariff codes, with exports to Taiwan listed as the main source of demand (at over 80%). Elsewhere, shipments to US and European destinations remained weak, the former down by almost 40% as higher silver prices and a slower than expected economic recovery dampened sales.

Most of China's growth in 2010 was attributable to increasing domestic consumption as rising personal income levels provided the platform for increased sales of luxury items to the rapidly expanding middle class. The Chinese, like most other global consumers, are moving away from heavy tableware (trays and jugs, for example) to smaller lighter items, with the silverware item used as a center piece for formal occasions rather than silver dominating the setting. In addition, the high cost of gold last year also contributed to silver's rise as a giftware alternative as some consumers switched to silver as it allowed for larger items at a reduced retail price point.

8. Appendices

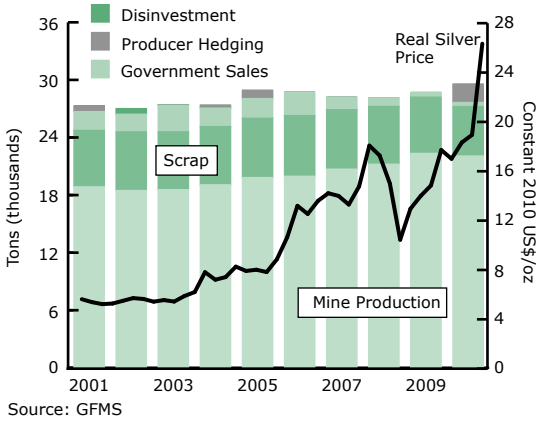
Contents

Appendix 1

Table 1 - World Silver Supply and Demand (tons) © GFMS / The Silver Institute

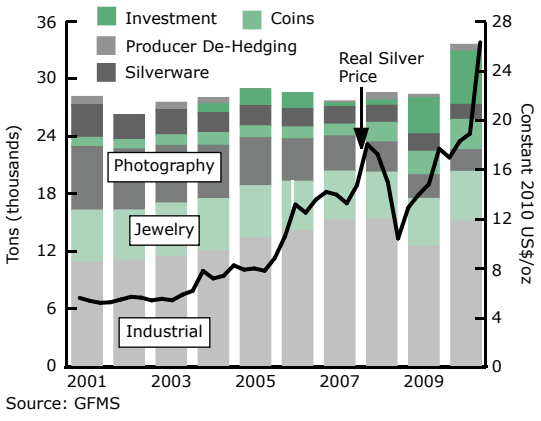
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Supply										
Mine Production	18,856	18,472	18,557	19,068	19,824	19,960	20,697	21,209	22,342	22,889
Net Government Sales	1,961	1,841	2,759	1,924	2,051	2,441	1,322	898	483	1,393
Old Silver Scrap	5,879	6,107	6,035	6,070	6,177	6,322	6,191	6,024	5,859	6,687
Producer Hedging	587	-	-	299	859	-	-	-	-	1,901
Implied Net Disinvestment	-	589	50	-	-	-	-	-	-	-
Total Supply	**27,282**	**27,009**	**27,402**	**27,361**	**28,910**	**28,724**	**28,210**	**28,132**	**28,684**	**32,870**
Demand										
Fabrication										
Industrial Applications	10,876	11,052	11,459	12,050	13,432	14,127	15,274	15,323	12,559	15,160
Photography	6,628	6,353	5,999	5,562	4,987	4,423	3,657	3,150	2,465	2,261
Jewelry	5,420	5,252	5,573	5,437	5,406	5,172	5,084	4,922	4,943	5,194
Silverware	3,299	2,596	2,610	2,089	2,101	1,899	1,819	1,776	1,811	1,566
Coins & Medals	948	983	1,110	1,318	1,246	1,237	1,235	2,035	2,457	3,151
Total Fabrication	27,171	26,237	26,751	26,456	27,172	26,858	27,070	27,206	24,234	27,333
Producer De-Hedging	-	772	651	-	-	211	753	360	694	-
Implied Net Investment	112	-	-	905	1,739	1,655	388	565	3,755	5,537
Total Demand	**27,282**	**27,009**	**27,402**	**27,361**	**28,910**	**28,724**	**28,210**	**28,132**	**28,684**	**32,870**
Silver Price (London US$/oz)	4.370	4.599	4.879	6.658	7.312	11.549	13.384	14.989	14.674	20.193

World Silver Supply



Source: GFMS

World Silver Demand



Source: GFMS

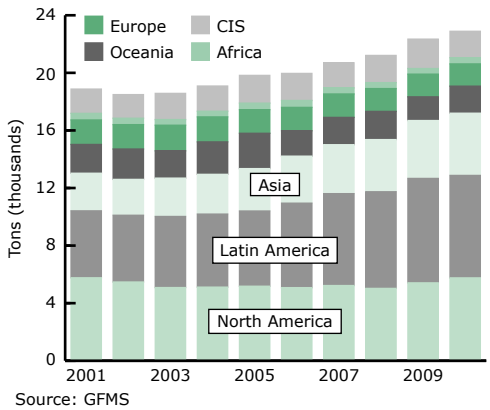
Table 2 - World Silver Mine Production (tons) © GFMS / The Silver Institute

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Europe										
Poland	1,183	1,211	1,376	1,362	1,261	1,260	1,233	1,212	1,220	1,174
Sweden	275	293	307	291	284	266	294	263	270	285
Greece	62	75	4	-	-	25	35	35	29	27
Portugal	23	19	22	25	24	20	28	41	22	23
Spain	55	13	2	-	5	2	2	2	6	14
Bulgaria	24	25	22	19	21	18	14	11	15	13
Macedonia	17	14	5	3	7	11	11	13	4	5
Romania	38	32	29	28	27	13	3	-	3	4
Italy	2	2	2	0	3	3	1	1	1	1
Serbia and Montenegro	4	4	1	1	1	1	1	1	1	1
Ireland	9	8	9	7	6	4	4	5	2	1
Other Countries	8	0	0	0	0	0	0	0	0	0
Total Europe	**1,700**	**1,695**	**1,779**	**1,736**	**1,639**	**1,624**	**1,626**	**1,585**	**1,574**	**1,547**
North America										
Mexico	2,760	2,747	2,569	2,569	2,894	2,970	3,135	3,236	3,554	3,999
United States	1,740	1,350	1,240	1,250	1,220	1,140	1,260	1,120	1,250	1,200
Canada	1,265	1,373	1,276	1,295	1,063	969	829	670	609	559
Total North America	**5,765**	**5,470**	**5,085**	**5,114**	**5,177**	**5,079**	**5,225**	**5,026**	**5,413**	**5,759**
Latin America										
Peru	2,674	2,762	2,921	3,060	3,191	3,456	3,501	3,681	3,844	3,612
Chile	1,349	1,210	1,312	1,360	1,379	1,602	1,929	1,396	1,301	1,276
Bolivia	381	462	491	434	399	472	525	1,114	1,326	1,274
Argentina	176	126	138	145	156	192	243	321	533	640
Guatemala	-	-	-	-	10	50	88	100	129	195
Honduras	50	56	54	50	54	56	54	59	58	58
Dominican Republic	-	-	-	-	-	-	-	0	18	19
Brazil	7	7	7	8	9	10	11	11	12	12
Colombia	7	7	10	9	7	8	10	9	11	12
Nicaragua	3	2	2	3	2	3	3	3	5	6
Uruguay	-	-	-	-	3	3	3	2	2	2
Other Countries	3	3	4	4	14	16	16	16	16	19
Total Latin America	**4,649**	**4,636**	**4,938**	**5,073**	**5,225**	**5,868**	**6,383**	**6,713**	**7,253**	**7,126**
Asia										
China	1,729	1,646	1,828	1,967	2,082	2,341	2,448	2,578	2,775	3,085
Turkey	114	114	113	126	162	187	235	314	389	384
India	54	67	91	105	102	183	178	212	292	301
Indonesia	374	332	297	266	308	246	268	248	240	214
Iran	82	82	82	84	90	100	90	98	107	105
Papua New Guinea	69	64	63	54	47	51	44	53	66	67
Philippines	34	9	10	9	19	24	28	14	34	37
Mongolia	37	35	34	36	36	37	37	36	36	35
North Korea	19	20	25	25	25	29	29	29	26	26
Thailand	6	22	18	16	20	17	13	13	21	23
Dem. Rep. of Laos	-	-	1	3	6	6	4	7	15	17
Japan	85	85	83	54	32	34	14	12	12	11
Other Countries	12	16	19	18	17	13	12	11	9	9
Total Asia	**2,613**	**2,494**	**2,665**	**2,763**	**2,946**	**3,266**	**3,400**	**3,624**	**4,022**	**4,313**

Table 2 - World Silver Mine Production (tons) © GFMS / The Silver Institute

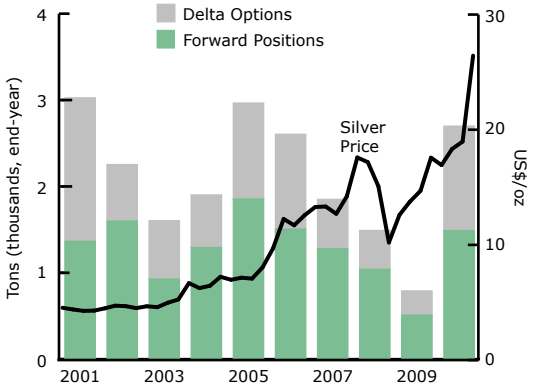
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Africa										
Morocco	283	263	193	210	247	247	222	251	266	301
South Africa	110	113	87	71	88	93	86	84	86	88
Zambia	5	6	6	8	10	12	13	14	15	18
Tanzania	7	7	8	13	13	13	12	12	12	13
Botswana	4	4	4	4	4	4	3	3	4	4
Ghana	2	2	2	1	2	2	2	2	2	2
Mali	2	3	2	2	2	3	3	2	3	2
Dem. Rep. of the Congo	1	3	36	34	54	68	70	34	-	-
Namibia	19	20	29	27	30	35	8	8	-	-
Other Countries	11	9	9	8	6	4	4	3	2	3
Total Africa	**443**	**429**	**378**	**378**	**455**	**480**	**423**	**413**	**390**	**431**
Oceania										
Australia	1,970	2,077	1,864	2,222	2,407	1,728	1,879	1,926	1,633	1,864
New Zealand	27	29	30	30	46	35	19	32	14	14
Fiji	2	2	1	2	1	1	-	0	0	0
Total Oceania	**1,999**	**2,108**	**1,895**	**2,254**	**2,454**	**1,764**	**1,898**	**1,959**	**1,648**	**1,878**
CIS										
Russia	650	699	918	941	1,010	972	910	1,132	1,312	1,145
Kazakhstan	940	849	802	703	812	796	708	629	614	548
Armenia	38	39	41	40	37	39	37	42	53	69
Uzbekistan	53	49	53	60	64	63	78	73	52	58
Kyrgyzstan	1	1	1	1	1	6	6	10	9	10
Tajikistan	4	4	4	4	3	3	3	3	3	3
Other Countries	-	-	-	-	-	-	-	-	-	2
Total CIS	**1,686**	**1,641**	**1,818**	**1,749**	**1,927**	**1,879**	**1,742**	**1,889**	**2,043**	**1,835**
World Total	**18,856**	**18,472**	**18,557**	**19,068**	**19,824**	**19,960**	**20,697**	**21,209**	**22,342**	**22,889**

World Silver Mine Production



Source: GFMS

Silver Producer Hedging: Outstanding Positions



Source: GFMS

Table 3 - Silver Fabrication: Coins and Medals Including the Use of Scrap (tons)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
United States	384	476	452	483	517	548	497	790	1,067	1,296
Canada	27	32	10	40	51	89	133	281	336	580
Austria	10	13	13	15	18	17	17	259	296	360
Germany	251	187	301	301	303	272	195	223	232	250
Australia	23	20	40	40	32	43	109	182	201	272
China	47	65	72	72	57	50	81	88	94	116
Mexico	35	34	47	85	81	58	51	43	52	64
Spain	55	47	34	70	54	46	38	34	32	41
Other Countries	114	109	141	212	134	115	115	136	147	173
World Total	**948**	**983**	**1,110**	**1,318**	**1,246**	**1,237**	**1,235**	**2,035**	**2,457**	**3,151**

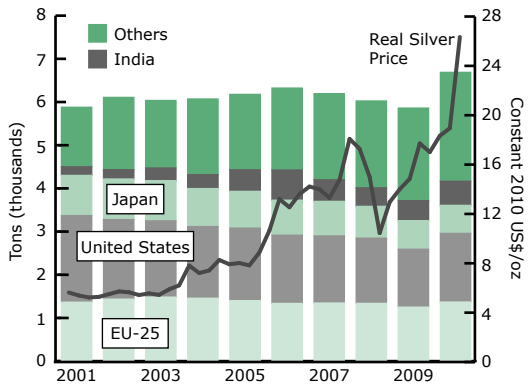
Table 4 - Supply of Silver from the Recycling of Old Scrap (tons)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Europe										
Germany	523	520	592	598	546	470	471	455	391	465
UK & Ireland	346	423	404	386	360	340	348	340	316	298
France	122	120	126	118	127	139	142	158	170	193
Italy	110	113	112	104	133	160	166	173	171	192
Austria	62	58	48	50	40	40	38	36	33	35
Netherlands	42	44	44	45	42	40	35	34	32	35
Sweden	33	32	32	32	31	29	28	27	26	26
Spain	13	13	14	14	13	13	12	14	16	23
Belgium	21	20	20	20	20	20	20	19	18	20
Denmark	18	17	17	17	16	16	16	15	14	16
Czech & Slovak Republics	14	13	13	14	14	14	14	13	12	13
Portugal	13	14	14	14	13	13	13	12	12	12
Finland	13	12	13	12	12	11	11	10	10	10
Norway	21	21	14	10	9	9	8	9	9	10
Switzerland	10	10	10	10	10	8	8	8	7	7
Other Countries	34	36	34	34	32	31	32	31	30	30
Total Europe	**1,395**	**1,466**	**1,506**	**1,476**	**1,418**	**1,353**	**1,361**	**1,354**	**1,266**	**1,385**
North America										
United States	2,005	1,842	1,766	1,659	1,680	1,580	1,554	1,510	1,340	1,590
Mexico	44	48	55	60	64	72	84	95	98	123
Canada	45	44	47	44	46	44	50	52	48	51
Total North America	**2,094**	**1,934**	**1,868**	**1,763**	**1,790**	**1,696**	**1,688**	**1,657**	**1,486**	**1,764**
Latin America										
Brazil	50	32	36	32	32	32	32	32	34	42
Argentina	23	20	20	20	20	24	20	16	14	20
Chile	12	12	12	12	14	16	16	16	14	18
Other Countries	24	24	25	24	29	33	30	30	30	41
Total Latin America	**109**	**88**	**93**	**88**	**95**	**105**	**98**	**94**	**91**	**121**
Middle East										
Saudi Arabia	24	224	23	40	50	56	58	59	60	69

Table 4 - Supply of Silver from the Recycling of Old Scrap (tons)

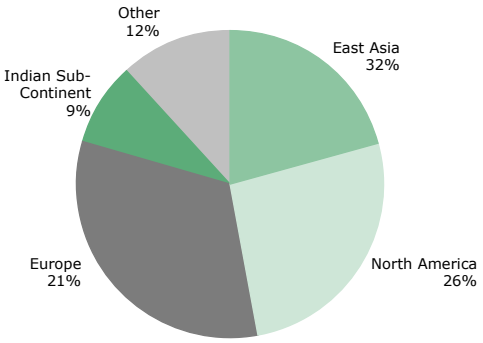
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Egypt	35	40	35	42	43	46	48	52	55	62
Turkey	39	44	52	47	41	35	30	36	38	34
Oman	5	5	5	5	5	6	6	6	6	7
Other Countires	11	11	11	15	13	15	16	16	16	19
Total Middle East	**114**	**324**	**126**	**149**	**152**	**158**	**157**	**168**	**176**	**191**
Indian Sub-Continent										
India	200	210	294	323	500	700	500	430	465	558
Other Countries	15	15	15	15	16	17	17	17	20	26
Total Indian Sub-Cont.	**215**	**225**	**309**	**338**	**516**	**717**	**517**	**447**	**485**	**584**
East Asia										
China	292	368	407	473	544	636	700	705	787	909
Japan	931	940	930	880	852	810	800	736	662	649
South Korea	198	208	220	225	226	240	242	240	262	294
Taiwan	62	72	77	85	84	88	91	97	111	129
Thailand	55	60	66	74	69	80	85	91	96	115
Singapore	12	13	13	14	14	16	16	15	15	17
Hong Kong	11	12	12	13	13	14	14	14	14	15
Indonesia	13	10	10	11	11	12	12	12	12	13
Vietnam	10	9	10	10	11	11	12	12	11	12
Philippines	6	6	6	6	6	6	6	6	6	7
Other Countries	3	4	4	4	4	5	5	5	5	6
Total East Asia	**1,593**	**1,701**	**1,755**	**1,794**	**1,834**	**1,919**	**1,983**	**1,934**	**1,982**	**2,165**
Africa										
Morocco	16	16	16	40	19	29	28	29	31	32
Other Countries	17	17	17	17	17	18	18	18	18	20
Total Africa	**33**	**33**	**33**	**57**	**36**	**47**	**46**	**47**	**50**	**52**
Oceania										
Oceania	74	73	65	64	55	53	52	51	49	49
Total Oceania	**74**	**73**	**65**	**64**	**55**	**53**	**52**	**51**	**49**	**49**
CIS										
CIS	252	263	280	340	280	276	288	272	275	375
Total CIS	**252**	**263**	**280**	**340**	**280**	**276**	**288**	**272**	**275**	**375**
World Total	**5,879**	**6,107**	**6,035**	**6,070**	**6,177**	**6,322**	**6,191**	**6,024**	**5,859**	**6,687**

World Silver Scrap Supply



Source: GFMS

World Scrap Supply, 2010



Source: GFMS

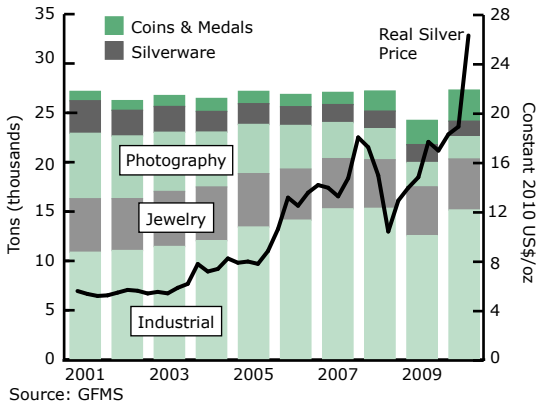
Table 5 - World Silver Fabrication Including the Use of Scrap (tons)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Europe										
Germany	1,237	1,102	1,216	1,257	1,260	1,275	1,249	1,271	1,028	1,233
Italy	1,867	1,786	1,736	1,722	1,579	1,446	1,364	1,226	1,072	1,094
UK & Ireland	1,406	1,323	1,350	1,604	1,330	1,013	780	729	597	645
Belgium	999	958	910	858	814	894	850	743	591	552
Austria	34	37	37	40	40	38	38	279	315	380
France	909	862	819	404	389	396	410	421	319	366
Spain	171	161	148	198	175	156	141	132	125	132
Poland	107	100	120	134	145	149	135	132	109	112
Switzerland	108	106	94	96	101	97	97	97	88	94
Netherlands	57	64	60	79	69	63	63	61	53	58
Greece	94	87	90	86	82	77	70	68	56	46
Portugal	80	53	82	127	54	45	43	42	40	41
Norway	71	60	62	65	56	52	40	40	30	33
Sweden	31	33	37	38	38	37	35	34	29	30
Denmark	28	24	22	21	21	21	21	20	18	19
Czech & Slovak Republics	31	21	22	21	20	20	20	19	17	18
Yugoslavia (former)	7	7	7	8	8	9	9	10	8	9
Hungary	13	13	13	13	12	7	7	9	8	8
Finland	14	14	13	12	12	13	10	10	8	8
Cyprus & Malta	10	10	9	9	9	9	9	9	8	8
Romania	12	12	12	12	12	12	8	8	6	7
Other Countries	4	4	4	5	5	5	5	5	5	5
Total Europe	**7,288**	**6,837**	**6,865**	**6,807**	**6,232**	**5,834**	**5,405**	**5,367**	**4,529**	**4,899**
North America										
United States	5,275	5,505	5,454	5,608	5,891	5,778	5,558	5,771	5,169	5,897
Canada	90	96	78	109	126	178	250	386	404	666
Mexico	530	564	629	682	693	587	576	545	510	536
Total North America	**5,895**	**6,164**	**6,160**	**6,400**	**6,710**	**6,543**	**6,384**	**6,702**	**6,084**	**7,099**
Latin America										
Brazil	204	198	204	227	232	145	223	215	199	241
Argentina	56	58	74	78	80	60	56	44	34	39
Dominican Republic	10	7	11	13	17	19	20	22	32	31
Peru	32	32	23	21	19	22	21	23	25	26
Colombia	22	22	22	22	21	21	21	19	17	18
Chile	13	13	13	13	13	13	13	13	12	13
Other Countries	31	30	28	33	31	35	33	37	32	33
Total Latin America	**368**	**360**	**376**	**408**	**414**	**315**	**387**	**372**	**352**	**401**
Middle East										
Turkey	200	254	294	321	309	276	247	262	222	211
Israel	83	83	81	83	86	88	87	82	69	69
Egypt	55	49	57	62	55	52	53	50	45	43
Iran	48	43	45	47	50	49	49	48	44	43
Other Countries	57	56	56	59	61	62	63	64	65	70
Total Middle East	**442**	**486**	**532**	**572**	**561**	**526**	**500**	**506**	**444**	**435**
Indian Sub-Continent										
India	4,339	3,309	3,309	2,163	2,850	2,575	2,770	2,868	3,244	2,926
Bangladesh & Nepal	185	150	140	132	116	113	113	114	112	108
Other Countries	67	66	66	71	73	74	75	71	67	63
Total Indian Sub-Cont.	**4,591**	**3,525**	**3,515**	**2,366**	**3,039**	**2,762**	**2,958**	**3,054**	**3,423**	**3,097**

Table 5 - World Silver Fabrication Including the Use of Scrap (tons)

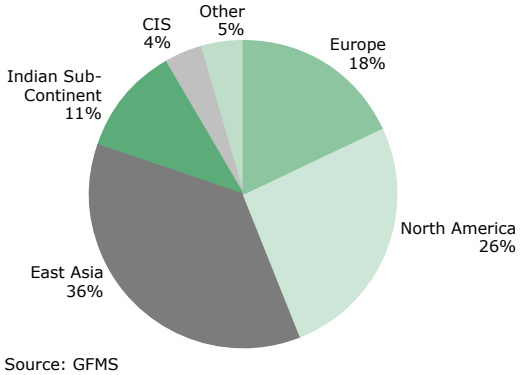
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
East Asia										
China	1,579	1,856	2,106	2,367	2,571	2,832	3,242	3,556	3,424	3,957
Japan	3,711	3,693	3,607	3,826	3,860	4,097	3,995	3,372	2,195	3,175
Thailand	1,022	1,014	1,138	1,151	1,150	1,150	1,140	1,046	954	956
South Korea	612	643	689	735	795	842	903	955	763	929
Taiwan	292	316	343	331	372	409	458	483	390	474
Indonesia	161	139	146	181	159	178	170	168	163	189
Hong Kong	100	105	99	107	110	118	125	120	99	114
Vietnam	23	26	28	30	32	35	37	39	40	45
Myanmar, Laos & Cambodia	28	30	32	28	28	26	26	26	26	28
Malaysia	18	20	21	22	21	20	20	20	20	21
Other Countries	14	14	15	14	15	14	14	14	14	15
Total East Asia	**7,561**	**7,855**	**8,223**	**8,791**	**9,112**	**9,722**	**10,130**	**9,800**	**8,089**	**9,901**
Africa										
Morocco	19	18	18	19	19	19	20	19	17	18
Tunisia	10	10	11	11	11	10	11	11	10	11
South Africa	7	7	8	8	8	8	8	8	8	8
Algeria	6	5	6	6	6	6	6	6	6	6
Libya	4	4	4	4	4	4	5	5	4	5
Other Countries	8	8	8	9	9	9	9	10	9	9
Total Africa	**53**	**52**	**54**	**57**	**58**	**57**	**59**	**60**	**54**	**56**
Oceania										
Australia	184	180	193	178	121	133	200	271	283	360
New Zealand	1	1	1	1	1	1	1	1	1	1
Total Oceania	**186**	**181**	**195**	**179**	**122**	**134**	**201**	**272**	**284**	**361**
CIS										
CIS	787	776	831	878	925	963	1,046	1,074	977	1,085
Total CIS	**787**	**776**	**831**	**878**	**925**	**963**	**1,046**	**1,074**	**977**	**1,085**
World total	**27,171**	**26,237**	**26,751**	**26,456**	**27,172**	**26,858**	**27,070**	**27,206**	**24,234**	**27,333**

World Silver Fabrication



Source: GFMS

World Silver Fabrication, 2010



Source: GFMS

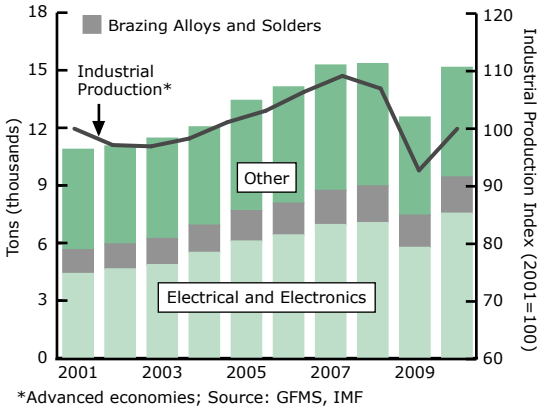
Table 6 - Silver Fabrication: Industrial Applications Including the Use of Scrap (tons)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Europe										
Germany	665	659	675	730	744	794	851	856	630	814
UK & Ireland	444	433	464	483	385	388	372	378	282	312
Italy	322	324	318	357	338	340	352	350	281	307
France	496	455	430	320	317	322	334	336	232	274
Switzerland	85	84	72	76	81	77	77	76	69	75
Spain	40	40	38	65	60	58	59	58	53	55
Netherlands	48	48	47	48	49	49	49	49	40	47
Poland	22	21	21	22	22	23	24	25	21	23
Austria	17	17	17	17	17	17	17	17	15	16
Norway	23	20	19	26	22	17	16	15	11	13
Sweden	10	10	10	10	10	10	11	11	8	10
Czech & Slovak Republics	11	9	9	8	8	9	9	9	7	9
Belgium	8	8	8	8	8	8	8	8	6	7
Other Countries	21	21	22	22	22	23	24	24	20	22
Total Europe	**2,211**	**2,148**	**2,148**	**2,193**	**2,085**	**2,135**	**2,202**	**2,208**	**1,675**	**1,983**
North America										
United States	2,449	2,584	2,699	2,931	3,134	3,323	3,548	3,703	3,012	3,571
Mexico	94	93	96	93	101	95	102	98	84	90
Canada	16	16	16	19	31	53	83	75	40	59
Total North America	**2,559**	**2,693**	**2,811**	**3,043**	**3,266**	**3,471**	**3,733**	**3,875**	**3,136**	**3,719**
Latin America										
Brazil	98	98	94	115	139	91	124	121	110	132
Argentina	20	20	20	20	28	32	34	32	24	28
Colombia	6	6	6	6	5	5	5	5	4	5
Ecuador	2	2	2	2	2	2	2	2	2	2
Other Countries	13	13	12	12	12	12	12	12	11	12
Total Latin America	**139**	**139**	**134**	**155**	**186**	**142**	**177**	**172**	**151**	**178**
Middle East										
Turkey	35	39	44	45	47	48	50	51	43	48
Israel	26	24	24	24	25	26	26	25	21	23
Egypt	4	3	3	3	3	3	3	3	3	4
Other Countries	4	4	4	4	4	4	4	4	4	4
Total Middle East	**68**	**70**	**74**	**77**	**79**	**81**	**83**	**83**	**70**	**78**
Indian Sub-Continent										
India	1,579	1,381	1,381	1,053	1,670	1,687	1,986	2,022	2,017	1,979
Pakistan	10	8	8	9	9	10	10	10	9	9
Total Indian Sub-Cont.	**1,589**	**1,389**	**1,389**	**1,062**	**1,679**	**1,697**	**1,996**	**2,032**	**2,026**	**1,988**
East Asia										
China	1,034	1,172	1,324	1,468	1,644	1,809	2,101	2,425	2,274	2,626
Japan	1,723	1,839	1,879	2,292	2,614	2,783	2,827	2,293	1,418	2,456
South Korea	468	504	545	590	648	694	750	806	612	762
Taiwan	279	307	333	319	359	394	442	467	375	458
Hong Kong	85	93	90	97	99	107	113	109	88	102
Other Countries	14	15	17	19	19	19	20	24	20	28
Total East Asia	**3,603**	**3,929**	**4,188**	**4,784**	**5,383**	**5,805**	**6,253**	**6,125**	**4,787**	**6,431**

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

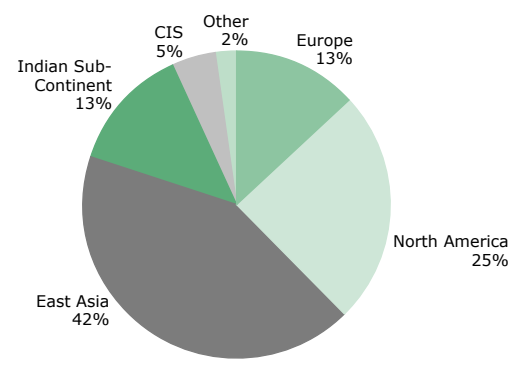
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Africa										
Morocco	8	8	8	8	8	9	9	8	7	8
South Africa	4	4	4	4	4	4	4	4	4	4
Other Countries	5	5	5	6	6	6	7	7	6	7
Total Africa	**17**	**17**	**17**	**18**	**19**	**19**	**20**	**20**	**18**	**20**
Oceania										
Oceania	65	66	68	69	63	65	66	65	58	63
Total Oceania	**65**	**66**	**68**	**69**	**63**	**65**	**66**	**65**	**58**	**63**
CIS										
CIS	624	600	630	650	672	712	744	744	637	700
Total CIS	**624**	**600**	**630**	**650**	**672**	**712**	**744**	**744**	**637**	**700**
World total	**10,876**	**11,052**	**11,459**	**12,050**	**13,432**	**14,127**	**15,274**	**15,323**	**12,559**	**15,160**

Components of Industrial Demand



*Advanced economies; Source: GFMS, IMF

World Silver Industrial Fabrication, 2010



Source: GFMS

Table 6a - Silver Fabrication: Electrical and Electronics Including the Use of Scrap (tons)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
United States	1,062	1,168	1,228	1,474	1,622	1,710	1,796	1,909	1,630	1,990
Japan	828	913	940	1,181	1,360	1,432	1,457	1,204	877	1,588
China	508	532	584	652	730	801	981	1,103	975	1,196
Germany	488	484	503	551	569	613	665	674	488	654
South Korea	290	306	333	360	400	430	456	495	390	500
India	145	151	159	167	300	312	390	420	442	480
Taiwan	232	260	280	260	293	320	363	384	309	377
France	342	309	297	252	248	254	264	269	178	215
Italy	86	87	90	118	108	112	121	127	107	121
UK & Ireland	175	172	183	190	141	138	139	145	107	120
Hong Kong	77	87	85	92	94	101	108	104	83	97
Mexico	56	56	58	56	64	61	65	64	56	60
Brazil	40	40	38	52	66	27	48	46	37	50
Turkey	22	25	30	31	31	32	33	34	29	32
Australia	18	20	21	21	22	23	23	22	20	22
Netherlands	16	16	16	16	17	17	17	17	13	16
Switzerland	12	12	14	14	13	13	13	15	13	14
Spain	0	0	0	10	10	10	11	11	8	10
Austria	7	7	7	7	7	7	7	7	6	7
Other Countries	7	7	7	7	7	7	7	7	6	7
World Total	**4,411**	**4,653**	**4,873**	**5,511**	**6,102**	**6,419**	**6,964**	**7,055**	**5,773**	**7,555**

Table 6b - Silver Fabrication: Brazing Alloys and Solders Including the Use of Scrap (tons)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
China	330	380	448	492	554	584	644	790	807	870
India	57	60	63	67	130	134	161	177	190	201
United States	258	260	247	228	240	224	240	225	162	183
Japan	109	104	104	116	119	122	123	114	70	105
Germany	88	95	97	100	98	105	112	107	71	87
South Korea	38	42	44	50	59	64	74	81	64	72
UK & Ireland	83	79	86	92	90	95	76	72	57	68
Italy	63	64	63	64	67	74	78	75	52	57
Canada	9	9	9	12	24	46	76	68	34	52
Switzerland	41	40	42	42	48	44	44	42	38	41
Taiwan	29	31	33	35	36	39	40	39	31	38
Brazil	23	23	22	23	25	26	26	25	27	30
France	32	32	25	22	25	26	27	26	17	20
Spain	30	30	28	25	20	20	20	20	18	18
Australia	20	19	20	20	16	17	17	17	15	17
Mexico	17	16	17	16	16	15	16	15	12	13
Netherlands	7	7	7	8	7	7	7	7	6	7
Austria	3	3	3	3	3	3	3	3	3	3
Other Countries	2	2	2	2	2	2	2	7	5	11
World Total	**1,239**	**1,295**	**1,359**	**1,416**	**1,579**	**1,646**	**1,784**	**1,907**	**1,680**	**1,892**

Table 7 - Silver Fabrication: Photographic Use Including the Use of Scrap (tons)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Europe										
EU-25	2,226	2,081	2,023	1,916	1,700	1,458	1,209	1,043	852	823
Other Countries	5	5	5	5	5	5	0	0	0	0
Total Europe	**2,231**	**2,086**	**2,028**	**1,921**	**1,705**	**1,463**	**1,209**	**1,043**	**852**	**823**
North America										
United States	2,037	2,017	1,832	1,716	1,753	1,442	1,071	875	728	630
Total North America	**2,037**	**2,017**	**1,832**	**1,716**	**1,753**	**1,442**	**1,071**	**875**	**728**	**630**
Latin America										
Brazil	70	64	68	68	43	0	45	40	32	45
Argentina	32	34	48	48	40	16	8	0	0	0
Total Latin America	**102**	**98**	**116**	**116**	**83**	**16**	**53**	**40**	**32**	**45**
Indian Sub-Continent										
India	10	10	10	10	10	10	9	9	8	8
Sri Lanka	4	4	4	4	4	4	4	1	0	0
Total Indian Sub-Cont.	**14**	**14**	**14**	**14**	**14**	**14**	**13**	**10**	**8**	**8**
East Asia										
Japan	1,935	1,799	1,677	1,476	1,180	1,251	1,100	1,008	700	630
China	140	176	180	190	167	157	143	115	95	81
Total East Asia	**2,075**	**1,975**	**1,857**	**1,666**	**1,348**	**1,408**	**1,243**	**1,123**	**795**	**711**
Oceania										
Oceania	74	71	64	47	4	4	4	3	3	3
Total Oceania	**74**	**71**	**64**	**47**	**4**	**4**	**4**	**3**	**3**	**3**
CIS										
CIS	95	92	88	83	80	76	64	56	47	42
Total CIS	**95**	**92**	**88**	**83**	**80**	**76**	**64**	**56**	**47**	**42**
World Total	**6,628**	**6,353**	**5,999**	**5,562**	**4,987**	**4,423**	**3,657**	**3,150**	**2,465**	**2,261**

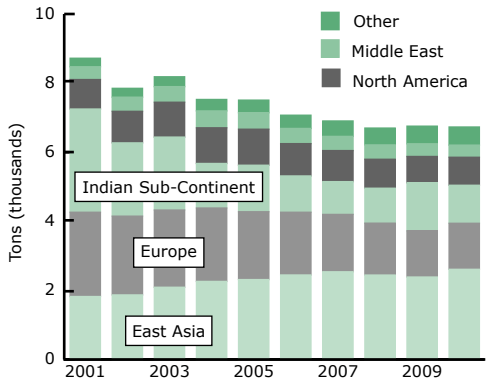
Table 8 - Silver Fabrication: Jewelry and Silverware Including the Use of Scrap (tons)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Europe										
Italy	1,537	1,457	1,408	1,348	1,230	1,096	1,001	867	781	777
Germany	271	245	240	226	213	210	203	193	166	169
Poland	78	71	91	95	105	111	101	95	76	77
France	85	84	81	69	55	57	59	57	59	64
Greece	94	87	90	86	82	77	70	68	56	46
Portugal	55	49	52	48	42	38	36	39	36	38
Spain	76	74	76	63	61	52	44	41	41	37
UK & Ireland	90	68	50	48	43	41	26	23	21	21
Norway	46	40	42	37	32	34	25	26	19	20
Sweden	20	22	26	27	27	26	24	22	20	20
Denmark	25	21	19	18	18	18	18	17	16	16
Switzerland	10	10	10	10	10	10	10	10	9	9
Cyprus & Malta	10	10	9	9	9	9	9	9	8	8
Finland	11	11	10	9	9	10	7	7	5	5
Austria	7	7	7	7	5	4	4	4	3	3
Other Countries	23	23	22	23	22	23	23	24	21	22
Total Europe	**2,439**	**2,279**	**2,235**	**2,124**	**1,963**	**1,816**	**1,660**	**1,501**	**1,336**	**1,332**
North America										
United States	405	428	471	479	487	465	442	404	362	400
Mexico	401	437	486	504	511	434	423	404	374	382
Canada	47	48	52	50	44	36	34	30	28	28
Total North America	**853**	**913**	**1,009**	**1,033**	**1,042**	**935**	**899**	**838**	**764**	**810**
Latin America										
Brazil	36	36	42	44	50	54	54	54	57	64
Peru	29	29	20	18	16	19	18	20	22	23
Colombia	16	16	16	16	16	16	16	14	13	14
Argentina	4	4	6	10	12	12	14	12	10	11
Ecuador	12	12	10	10	8	10	10	10	7	7
Other Countries	29	25	30	37	41	45	44	50	58	58
Total Latin America	**126**	**122**	**124**	**135**	**143**	**156**	**155**	**159**	**168**	**176**
Middle East										
Turkey	164	211	245	272	258	224	194	207	175	159
Israel	55	57	56	57	59	61	60	56	46	44
Egypt	51	46	53	58	52	48	50	46	42	39
Saudi Arabia & Yemen	18	18	18	19	21	21	22	22	23	25
Other Countries	83	77	79	83	86	86	87	86	82	85
Total Middle East	**371**	**410**	**452**	**489**	**476**	**440**	**411**	**416**	**367**	**352**
Indian Sub-Continent										
India	2,750	1,918	1,918	1,100	1,170	878	775	837	1,219	939
Bangladesh & Nepal	185	150	140	132	116	113	113	114	112	108
Other Countries	53	54	54	58	60	60	61	61	59	54
Total Indian Sub-Cont.	**2,988**	**2,122**	**2,112**	**1,290**	**1,346**	**1,051**	**949**	**1,012**	**1,390**	**1,101**
East Asia										
China	358	443	530	637	702	816	917	928	961	1,134
Thailand	1,017	1,004	1,127	1,147	1,145	1,146	1,136	1,037	946	947
South Korea	144	139	144	145	147	149	153	149	150	167
Indonesia	147	124	129	162	140	159	151	149	147	164

Table 8- Silver Fabrication: Jewelry and Silverware Including the Use of Scrap (tons)

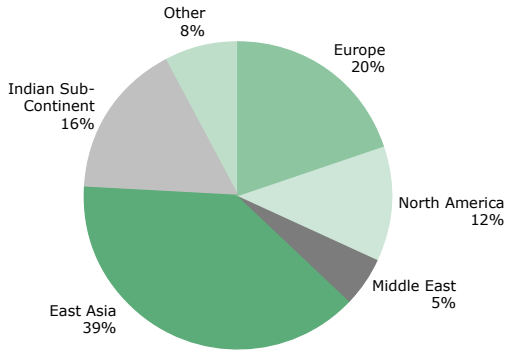
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Japan	53	52	49	56	64	61	65	62	65	70
Vietnam	23	26	28	30	32	35	37	39	40	45
Myanmar, Laos & Cambodia	28	30	32	28	28	26	26	26	26	28
Malaysia	18	20	21	22	21	20	20	20	20	21
Taiwan	10	9	10	12	13	12	12	12	11	12
Other Countries	26	23	21	21	21	22	22	22	21	23
Total East Asia	**1,823**	**1,869**	**2,091**	**2,260**	**2,313**	**2,446**	**2,539**	**2,444**	**2,387**	**2,611**
Africa										
Morocco	11	11	10	11	11	11	11	11	9	10
Tunisia	9	9	10	10	10	9	10	10	10	10
Algeria	5	4	5	5	5	5	5	5	4	4
Other Countries	11	11	12	13	13	13	13	14	13	12
Total Africa	**36**	**35**	**37**	**39**	**39**	**37**	**39**	**40**	**36**	**36**
Oceania										
Australia	22	23	22	23	22	21	21	20	20	22
Other Countries	1	1	1	1	1	1	1	1	1	1
Total Oceania	**23**	**24**	**23**	**24**	**23**	**22**	**22**	**21**	**22**	**23**
CIS										
Russia	43	55	80	112	138	144	205	241	263	296
Other Countries	19	20	21	22	23	23	25	25	21	24
Total CIS	**61**	**75**	**101**	**134**	**161**	**168**	**229**	**266**	**284**	**320**
World Total	**8,720**	**7,849**	**8,183**	**7,526**	**7,507**	**7,071**	**6,904**	**6,698**	**6,754**	**6,760**

World Jewelry & Silverware Fabrication



Source: GFMS

World Jewelry & Silverware Fabrication, 2010



Source: GFMS

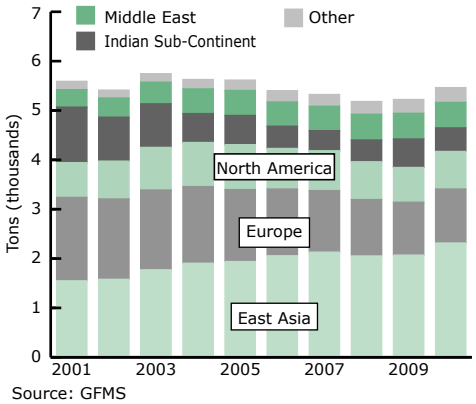
Table 8a - Silver Fabrication: Jewelry Including the Use of Scrap (tons)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Europe										
Italy	1,157	1,142	1,110	1,065	980	876	802	703	663	679
Germany	114	104	113	116	118	119	120	122	115	119
Poland	75	68	88	92	102	108	98	92	74	75
France	77	76	74	62	48	50	52	49	54	59
Spain	42	46	52	42	44	40	35	35	38	34
Portugal	49	44	47	43	37	34	32	33	31	32
Greece	30	28	30	32	34	33	32	36	32	28
UK & Ireland	77	56	38	36	32	30	16	14	12	13
Sweden	9	10	12	12	12	12	11	10	9	10
Switzerland	7	7	7	7	7	7	7	7	7	7
Denmark	11	10	9	8	8	8	8	8	7	7
Cyprus & Malta	7	7	6	7	7	7	6	6	5	5
Norway	7	6	6	6	5	5	5	4	5	5
Finland	3	3	3	3	3	3	2	2	2	2
Austria	3	3	3	3	2	1	1	1	1	1
Other Countries	20	20	19	20	19	20	20	21	19	19
Total Europe	**1,690**	**1,629**	**1,617**	**1,554**	**1,458**	**1,351**	**1,248**	**1,143**	**1,072**	**1,095**
North America										
United States	340	368	416	428	440	420	400	372	334	374
Mexico	325	358	403	423	434	372	380	368	346	362
Canada	39	40	44	42	36	30	28	26	24	25
Total North America	**704**	**766**	**863**	**893**	**910**	**822**	**808**	**766**	**704**	**761**
Latin America										
Brazil	32	32	38	40	45	48	48	48	52	60
Peru	13	13	10	9	8	11	10	13	16	17
Argentina	3	3	4	7	7	8	9	8	7	8
Colombia	6	6	6	6	6	6	6	6	7	7
Ecuador	7	7	6	6	5	6	6	6	4	5
Other Countries	22	17	23	29	34	37	36	42	52	52
Total Latin America	**83**	**78**	**87**	**97**	**105**	**116**	**115**	**123**	**138**	**149**
Middle East										
Turkey	92	129	154	185	176	150	127	139	120	109
Egypt	40	36	44	48	43	41	43	40	36	34
Saudi Arabia & Yemen	15	15	15	16	17	18	18	18	20	21
Israel	13	13	13	13	14	13	14	14	12	13
Other Countries	34	33	33	34	36	37	37	37	38	43
Total Middle East	**193**	**226**	**258**	**296**	**286**	**258**	**239**	**249**	**227**	**220**
Indian Sub-Continent										
India	1,032	804	800	500	510	369	323	355	487	390
Bangladesh & Nepal	69	63	58	60	56	54	55	58	60	59
Other Countries	24	24	24	26	27	27	28	29	30	29
Total Indian Sub-Cont.	**1,125**	**891**	**883**	**586**	**593**	**451**	**406**	**441**	**578**	**477**
East Asia										
China	275	341	408	486	540	627	713	733	814	971
Thailand	896	884	999	1,011	1,005	1,012	995	904	832	870
South Korea	118	117	121	123	122	126	130	127	131	148
Indonesia	128	103	108	139	117	137	131	129	129	146
Japan	51	50	48	55	63	60	64	61	64	69

Table 8a - Silver Fabrication: Jewelry Including the Use of Scrap (tons)

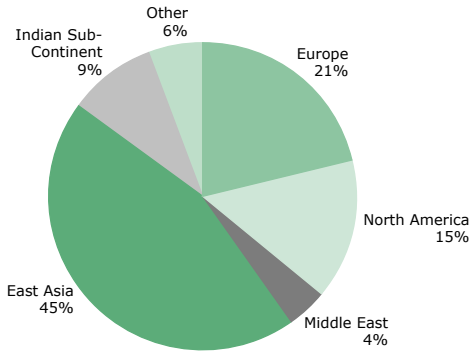
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Vietnam	21	24	26	27	29	33	34	37	38	42
Myanmar, Laos & Cambodia	20	21	23	20	20	19	19	19	19	22
Malaysia	17	18	19	20	19	19	18	19	19	20
Hong Kong	10	8	7	7	7	8	8	8	8	9
Taiwan	6	6	7	8	9	9	9	8	8	9
Other Countries	8	8	8	8	8	8	8	8	8	8
Total East Asia	**1,549**	**1,579**	**1,772**	**1,905**	**1,939**	**2,057**	**2,129**	**2,053**	**2,069**	**2,315**
Africa										
Morocco	9	8	8	8	8	8	9	8	7	8
Tunisia	6	6	7	7	7	6	7	7	7	7
Algeria	3	3	3	4	4	3	3	3	3	3
Other Countries	9	9	10	10	10	10	10	11	11	10
Total Africa	**27**	**27**	**28**	**29**	**29**	**28**	**30**	**30**	**28**	**28**
Oceania										
Australia	21	22	21	21	21	20	20	19	20	21
Other Countries	1	1	1	1	1	1	1	1	1	1
Total Oceania	**22**	**23**	**22**	**22**	**22**	**21**	**21**	**20**	**21**	**22**
CIS										
Russia	14	19	28	38	48	51	70	79	92	109
Other Countries	14	15	16	16	17	17	18	18	16	18
Total CIS	**28**	**34**	**43**	**55**	**64**	**68**	**89**	**97**	**108**	**127**
World Total	**5,420**	**5,252**	**5,573**	**5,437**	**5,406**	**5,172**	**5,084**	**4,922**	**4,943**	**5,194**

World Jewelry Fabrication



Source: GFMS

World Jewelry Fabrication, 2010

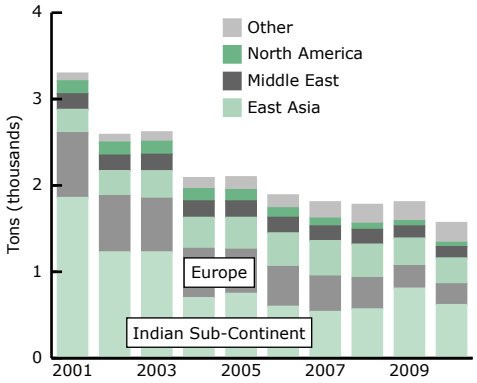


Source: GFMS

Table 9 - Silver Fabrication: Silverware Including the Use of Scrap (tons)

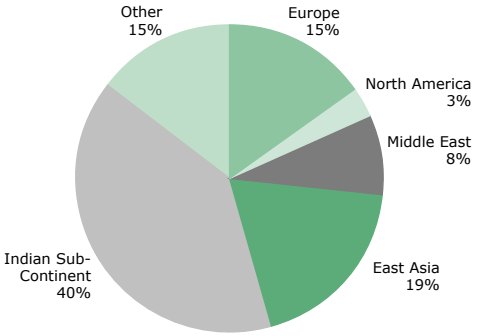
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Europe										
Italy	380	315	298	283	250	220	199	164	118	98
Germany	157	142	128	110	95	91	83	71	51	51
Greece	64	59	60	54	48	44	38	32	24	18
Norway	39	34	35	31	27	29	20	21	14	15
Sweden	11	12	14	15	15	14	12	12	10	10
Denmark	14	12	11	10	10	10	10	10	9	9
Other Countries	84	77	72	67	61	56	50	49	37	36
Total Europe	**749**	**650**	**617**	**570**	**505**	**464**	**413**	**358**	**264**	**237**
North America										
United States	65	60	55	51	47	45	42	32	28	26
Mexico	76	79	83	81	77	62	43	36	28	20
Canada	8	8	8	8	8	6	6	4	4	3
Total North America	**149**	**147**	**146**	**140**	**132**	**113**	**91**	**72**	**60**	**50**
Latin America										
Colombia	10	10	10	10	10	10	10	8	7	7
Peru	16	16	10	9	8	8	8	7	6	6
Other Countries	17	17	17	19	21	22	23	22	17	15
Total Latin America	**43**	**43**	**37**	**38**	**39**	**40**	**41**	**36**	**30**	**27**
Middle East										
Turkey	72	83	91	87	82	74	67	68	55	50
Israel	42	44	43	44	46	48	45	42	34	31
Egypt	11	10	10	10	9	8	7	6	6	5
Saudi Arabia & Yemen	4	3	3	4	4	3	4	4	3	3
Other Countries	50	44	46	48	50	49	49	48	43	42
Total Middle East	**178**	**184**	**193**	**193**	**191**	**182**	**172**	**168**	**141**	**131**
Indian Sub-Continent										
India	1,718	1,114	1,118	600	660	509	452	482	732	549
Bangladesh & Nepal	116	87	82	72	60	59	58	57	52	49
Other Countries	29	30	30	32	33	33	33	32	28	25
Total Indian Sub-Cont.	**1,863**	**1,231**	**1,229**	**704**	**753**	**601**	**542**	**571**	**812**	**623**
East Asia										
China	83	102	122	151	162	189	204	196	147	163
Thailand	121	121	129	136	140	134	141	133	115	77
South Korea	26	22	23	22	25	23	23	22	20	19
Indonesia	19	21	21	23	23	21	20	20	17	18
Other Countries	26	24	24	23	24	22	22	21	19	18
Total East Asia	**273**	**290**	**319**	**355**	**374**	**389**	**410**	**391**	**318**	**296**
Africa										
Africa	9	9	9	9	9	9	10	9	9	8
Total Africa	**9**	**9**	**9**	**9**	**9**	**9**	**10**	**9**	**9**	**8**
Oceania										
Oceania	1	1	1	1	1	1	1	1	1	1
Total Oceania	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
CIS										
Russia	29	36	53	73	91	93	134	162	171	187
Other Countries	5	5	5	6	6	6	6	6	5	5
Total CIS	**34**	**41**	**58**	**79**	**96**	**99**	**141**	**169**	**176**	**192**
World Total	**3,299**	**2,596**	**2,610**	**2,089**	**2,101**	**1,899**	**1,819**	**1,776**	**1,811**	**1,566**

World Silverware Fabrication



Source: GFMS

World Silverware Fabrication, 2010



Source: GFMS

Table 1b - Supply & Demand with Bar Investment

(tons)	2008	2009	2010
Supply			
Mine Production	21,209	22,342	22,889
Net Government Sales	898	483	1,393
Old Silver Scrap	6,024	5,859	6,687
Producer Hedging	-	-	1,901
Physical Bar Disinvestment	-	480	-
Implied Net Disinvestment	3,009	-	-
Total Supply	**31,141**	**29,163**	**32,870**
Demand			
Total Fabrication	27,206	24,234	27,333
Producer De-Hedging	360	694	-
Physical Bar Investment	3,574	-	1,729
Implied Net Investment	-	4,235	3,808
Total Demand	**31,141**	**29,163**	**32,870**

Appendix 2

Nominal Silver Prices in Various Currencies

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 Mumbai market.

	London US$/oz	India Rupee/kg	Thai Baht/oz	Japan Yen/10g	Korea Won/10g	China Yuan/kg	Eurozone* Euro/kg	Mexico Peso/oz
1977	4.633	1,120	94.52	400	721	N/a	177	0.10
1978	5.422	1,393	110.26	367	844	N/a	179	0.12
1979	11.068	1,896	225.99	780	1,722	N/a	333	0.25
1980	20.984	2,783	429.67	1,530	4,098	1,011	628	0.48
1981	10.487	2,650	228.83	744	2,296	575	390	0.26
1982	7.922	2,675	182.21	634	1,862	482	316	0.45
1983	11.430	3,435	262.89	873	2,851	726	479	1.37
1984	8.145	3,514	192.53	622	2,111	608	382	1.37
1985	6.132	3,880	166.54	470	1,715	579	296	1.58
1986	5.465	4,105	143.71	296	1,549	607	195	3.34
1987	7.016	5,124	180.46	326	1,855	840	208	9.67
1988	6.532	6,231	165.23	269	1,536	782	189	14.85
1989	5.500	6,803	141.36	244	1,187	666	170	13.54
1990	4.832	6,779	123.62	225	1,099	743	129	13.59
1991	4.057	6,993	103.51	176	956	694	111	12.24
1992	3.946	7,580	100.24	161	991	700	101	12.21
1993	4.313	6,163	109.20	154	1,113	799	117	13.44
1994	5.285	6,846	132.92	174	1,365	1,465	141	17.84
1995	5.197	6,864	129.49	157	1,289	1,395	122	33.36
1996	5.199	7,291	131.77	182	1,345	1,390	128	39.51
1997	4.897	7,009	153.60	191	1,498	1,305	139	38.78
1998	5.544	8,016	229.30	233	2,498	1,476	160	50.65
1999	5.218	8,022	197.38	191	1,995	1,389	158	49.90
2000	4.953	8,002	198.61	172	1,800	1,318	172	46.82
2001	4.370	7,420	194.15	171	1,814	1,163	157	40.82
2002	4.599	7,934	197.57	185	1,850	1,224	156	44.41
2003	4.879	8,138	202.39	182	1,869	1,298	139	52.64
2004	6.658	10,606	267.79	232	2,452	1,772	172	75.14
2005	7.312	11,083	294.07	259	2,407	1,926	189	79.68
2006	11.549	17,843	437.51	432	3,545	2,958	296	125.88
2007	13.384	18,794	461.98	507	3,999	3,273	314	146.26
2008	14.989	21,620	499.34	498	5,311	3,349	328	166.82
2009	14.674	23,815	503.12	440	6,024	3,230	337	198.30
2010	20.193	32,007	640.59	570	7,507	4,393	489	254.40

* From 1977-1998, the DM/kg price is expressed in Euro/kg at the official conversion rate of 1.95583

Appendix 3

Real Silver Prices in Various Currencies (CPI deflated - constant 2010 money terms)

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 Mumbai market.

	London US$/oz	India* Rupee/kg	Thai Baht/oz	Japan Yen/10g	Korea Won/10g	China Yuan/kg	Eurozone** Euro/kg	Mexico Peso/oz
1977	16.670	13,900	414.32	604	5,177	N/a	346	234.94
1978	18.121	16,860	447.82	532	5,293	N/a	342	236.07
1979	33.246	21,601	835.24	1,090	9,136	N/a	610	408.48
1980	55.529	28,468	1326.60	1,983	16,891	5,082	1,092	616.77
1981	25.157	23,973	627.10	919	7,800	2,817	637	257.37
1982	17.901	22,424	474.38	763	5,901	2,315	492	281.45
1983	25.024	25,735	659.86	1,030	8,735	3,419	721	428.57
1984	17.093	24,307	479.12	718	6,321	2,784	560	257.80
1985	12.426	25,420	404.58	532	5,014	2,372	426	188.32
1986	10.872	24,742	342.82	333	4,406	2,323	281	214.62
1987	13.455	28,389	419.99	366	5,122	2,998	298	267.75
1988	12.045	31,407	370.44	300	3,958	2,351	268	192.01
1989	9.674	32,301	300.81	266	2,894	1,692	234	145.87
1990	8.063	29,538	248.49	238	2,468	1,833	173	115.61
1991	6.495	26,759	196.83	180	1,965	1,654	158	84.92
1992	6.133	25,949	183.03	162	1,914	1,567	137	73.34
1993	6.510	19,834	193.01	153	2,053	1,562	152	73.52
1994	7.775	19,992	223.64	172	2,370	2,304	178	91.24
1995	7.437	18,186	205.88	155	2,141	1,878	152	126.40
1996	7.228	17,726	198.01	180	2,130	1,727	157	111.40
1997	6.653	15,902	218.53	185	2,271	1,578	167	90.64
1998	7.416	16,059	302.08	225	3,523	1,799	191	102.12
1999	6.831	15,356	259.29	185	2,790	1,718	187	86.30
2000	6.270	14,725	256.81	167	2,463	1,625	201	73.94
2001	5.381	13,170	247.03	168	2,384	1,424	180	60.62
2002	5.575	13,490	249.64	184	2,366	1,510	177	62.78
2003	5.783	13,331	251.20	181	2,310	1,584	155	71.18
2004	7.686	16,740	323.45	230	2,925	2,080	189	97.06
2005	8.164	16,781	339.76	258	2,795	2,221	204	98.98
2006	12.492	25,536	483.08	429	4,027	3,362	315	150.89
2007	14.075	25,286	498.91	503	4,430	3,552	327	168.63
2008	15.181	26,846	511.30	488	5,621	3,432	333	182.96
2009	14.915	26,685	519.57	438	6,201	3,326	343	206.54
2010	20.193	32,007	640.59	570	7,507	4,393	489	254.40

* From 1977-1998, the DM/kg price is expressed in Euro/kg at the official conversion rate of 1.95583

Appendix 4

Silver Prices in US$ per ounce

	London Silver Market - Spot			Comex Spot Settlement		
	High	Low	Average	High	Low	Average
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	3.9348
1993	5.4200	3.5600	4.3130	5.4430	3.5230	4.3082
1994	5.7475	4.6400	5.2851	5.7810	4.5730	5.2803
1995	6.0375	4.4160	5.1971	6.1020	4.3750	5.1871
1996	5.8275	4.7100	5.1995	5.8190	4.6760	5.1777
1997	6.2675	4.2235	4.8972	6.3070	4.1550	4.8773
1998	7.8100	4.6900	5.5398	7.2600	4.6180	5.4914
1999	5.7900	4.8800	5.2188	5.7600	4.8720	5.2149
2000	5.4475	4.5700	4.9526	5.5470	4.5630	4.9662
2001	4.8200	4.0500	4.3702	4.8570	4.0280	4.3603
2002	5.0975	4.2350	4.5990	5.1250	4.2230	4.5967
2003	5.9650	4.3700	4.8787	5.9930	4.3460	4.8806
2004	8.2900	5.4950	6.6578	8.2110	5.5140	6.6927
2005	9.2250	6.3900	7.3115	9.0000	6.4270	7.3220
2006	14.9400	8.8300	11.5492	14.8460	8.8090	11.5473
2007	15.8200	11.6700	13.3835	15.4990	11.4650	13.3762
2008	20.9200	8.8800	14.9891	20.6850	8.7900	14.9471
2009	19.1800	10.5100	14.6743	19.2950	10.4200	14.6961
2010	30.7000	15.1400	20.1929	30.9100	14.8230	20.3127

US Prices in 2010

Comex Settlement

US$ per ounce	High	Low	Average
January	18.784	16.183	17.713
February	16.736	14.823	15.898
March	17.512	16.449	17.109
April	18.611	17.669	18.152
May	19.640	17.493	18.451
June	19.105	17.290	18.464
July	18.346	1.742	17.893
August	19.398	17.890	18.444
September	21.929	19.359	20.612
October	24.560	22.013	23.426
November	28.902	24.432	26.597
December	30.910	28.224	29.394

Source: Comex

Leasing Rates in 2010

Monthly Averages

Average	3-month	6-month	12-month
January	-0.34%	-0.20%	0.29%
February	-0.33%	-0.20%	0.26%
March	-0.29%	-0.16%	0.28%
April	-0.23%	-0.10%	0.36%
May	-0.15%	0.03%	0.47%
June	-0.18%	-0.02%	0.39%
July	-0.22%	-0.05%	0.34%
August	-0.35%	-0.15%	0.21%
September	-0.32%	-0.14%	0.18%
October	-0.25%	-0.11%	0.19%
November	-0.28%	-0.16%	0.13%
December	-0.29%	-0.18%	0.09%

Source: LBMA

Appendix 5

Leading Primary Silver Mines

Rank	Mine Name	Country	Company	2009 Moz	2010 Moz
1	Cannington[1]	Australia	BHP Billiton	33.76	38.60
2	Fresnillo	Mexico	Fresnillo plc.	35.42	35.91
3	Gümüsköy	Turkey	Eti Gümüş A.Ş.	11.30	11.46
4	Dukat[2]	Russia	JSC Polymetal	11.80	11.10
5	Pallancata	Peru	Hochschild Mining / International Minerals	8.42	10.14
6	Uchucchacua	Peru	Compañia de Minas Buenaventura	10.56	9.27
7	Arcata	Peru	Hochschild Mining	9.54	8.10
8	Greens Creek	United States	Hecla Mining	7.46	7.21
9	Imiter[3]	Morocco	Société Métallurgique d'Imiter	6.75	7.20
10	San Bartolomé	Bolivia	Coeur d'Alene Mines	7.47	6.71
11	Alamo Dorado	Mexico	Pan American Silver Corp.	5.28	6.68
12	Pirquitas	Argentina	Silver Standard	1.11	6.30
13	Palmarejo	Mexico	Coeur d'Alene Mines	3.05	5.89
14	San José	Argentina	Hochschild Mining / Minera Andes	5.00	5.32
15	Ying[4]	China	Silvercorp Metals	4.26	4.32

1 reported payable metal in concentrate; 2 including Gotsovoye; 3 estimate; 4 Reported Sales

Silver Mine Production by Source Metal

(million ounces)

	2007	2008	2009	2010
Primary				
Mexico	50.0	53.7	59.8	68.8
Australia	37.5	35.4	33.8	38.6
Peru	30.4	39.5	41.6	36.5
Other	72.9	66.6	77.5	79.5
Total	***190.8***	***195.2***	***212.7***	***223.4***
Gold				
Mexico	14.5	15.4	18.7	21.7
Chile	8.0	12.3	15.8	14.3
Russia	3.2	8.1	11.4	11.5
Other	37.3	37.3	40.4	35.0
Total	***63.1***	***73.2***	***86.2***	***82.6***
Copper				
Poland	39.1	38.4	38.7	37.3
Chile	37.6	27.7	25.8	26.6
Peru	17.0	20.1	23.6	23.1
Other	77.3	73.0	76.7	75.8
Total	***171.0***	***159.2***	***164.8***	***162.8***
Lead/Zinc				
China	56.6	60.0	65.1	73.0
Peru	56.2	49.1	47.3	48.6
Mexico	32.7	31.3	32.0	34.4
Other	91.8	110.6	107.7	107.8
Total	***237.3***	***250.9***	***252.1***	***263.8***
Other	**3.3**	**3.4**	**2.5**	**3.3**
World Total	**665.4**	**681.9**	**718.3**	**735.9**

Source: GFMS

Silver Mine Production by Main Region and Source Metal

(million ounces)

	2007	2008	2009	2010
North America				
primary	71.3	69.3	75.3	83.8
lead/zinc	51.6	47.6	48.6	51.2
copper	17.7	17.4	19.1	20.2
gold	25.6	25.5	30.2	28.2
other	1.6	1.8	0.9	1.7
Total	***168.0***	***161.6***	***174.0***	***185.1***
Latin America				
primary	51.2	54.9	65.3	63.5
lead/zinc	72.7	82.1	81.0	81.3
copper	55.6	48.7	50.8	51.3
gold	25.7	30.1	36.1	33.0
other	0.0	0.0	0.0	0.0
Total	***205.2***	***215.8***	***233.2***	***229.1***
Asia & CIS				
primary	25.4	29.3	31.6	30.3
lead/zinc	78.8	83.7	93.5	99.7
copper	50.1	47.6	50.3	47.2
gold	9.5	15.0	17.9	18.8
other	1.6	1.6	1.6	1.6
Total	***165.3***	***177.2***	***195.0***	***197.6***
Rest of the World				
primary	42.9	41.7	40.5	45.8
lead/zinc	34.1	37.5	29.0	31.5
copper	47.6	45.4	44.5	44.1
gold	2.3	2.6	2.1	2.6
other	0.0	0.0	0.0	0.0
Total	***126.9***	***127.2***	***116.1***	***124.0***
World Total	**665.4**	**681.9**	**718.3**	**735.9**

Appendix 6

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-09	423,943	92,990	67,912	107,138	111.7	1.3	315
Feb	652,242	94,102	68,408	90,276	105.8	1.4	362
Mar	433,757	94,506	59,553	97,591	98.8	1.3	319
Apr	575,714	89,263	88,982	100,855	101.1	1.3	305
May	418,399	102,631	85,473	117,815	97.5	1.4	342
Jun	869,109	104,594	104,093	113,022	100.0	1.5	358
Jul	486,592	99,411	87,124	126,559	90.5	1.2	310
Aug	842,904	105,057	73,071	113,071	79.3	1.1	322
Sep	657,020	128,160	136,242	129,190	113.0	1.9	406
Oct	809,303	130,427	110,012	144,120	101.1	1.7	341
Nov	1,159,284	131,516	102,646	100,705	81.0	1.4	350
Dec	680,278	124,953	77,897	107,859	88.0	1.6	348
Jan-10	755,863	123,393	111,272	121,204	70.4	1.2	298
Feb	1,065,168	109,182	112,118	111,805	89.0	1.4	351
Mar	750,170	115,505	83,903	121,188	94.0	1.6	307
Apr	994,814	127,083	78,096	104,351	92.7	1.7	300
May	936,865	120,952	150,964	132,556	104.3	1.9	410
Jun	1,079,348	127,990	96,579	102,174	85.0	1.6	333
Jul	642,826	122,473	73,280	113,410	57.2	1.0	290
Aug	978,609	130,813	99,446	108,960	65.5	1.2	318
Sep	757,106	152,540	135,170	133,290	88.5	1.8	389
Oct	1,314,164	154,866	263,619	174,948	92.2	2.2	441
Nov	2,268,927	133,139	269,993	134,770	108.6	2.9	560
Dec	1,279,578	135,970	154,995	156,502	99.7	2.9	570

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

Silver ETF Holdings

(Moz, end-period)	iShares Silver Trust	ETF Securities*	ZKB	Sprott Silver Turst	Other**	Total	Value US$ Bn***
2009 Q1	266.8	17.2	45.1	-	52.5	381.5	5.00
Q2	280.5	19.9	49.4	-	58.6	408.4	5.69
Q3	276.4	28.3	55.2	-	64.4	424.4	6.98
Q4	305.9	33.0	59.0	-	69.8	467.6	7.95
2010 Q1	298.3	34.0	64.9	-	71.4	468.6	8.20
Q2	295.0	36.7	71.0	-	79.2	482.0	9.03
Q3	314.6	41.4	77.4	-	78.3	511.8	11.29
Q4	351.1	51.4	76.2	22.3	81.5	582.6	17.84

*Includes ETF Securities London, Australia, NYSE, GLTR and WITE funds **Other: includes Central Fund of Canada, Silver Bullion Trust, Claymore, Mitsubishi UFJ Funds ****Using the quarter-end London price
Source: Respective issuers, GFMS