SILVER

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Silver prices spent most of 2001 under pressure, slipping from a high in January of US$4.82/oz to levels little above US$4 by late November. This left the average for the year, US$4.37/oz, down a significant 12% year-on-year. Last year at least ended on a brighter note, with silver fixing at US$4.52 on December 31, only seven cents down on the year's first trading day.

Having been generally subdued for much of the year, lease rates soared dramatically in December. The three-month rate, for example, leapt from just over 1% to almost 10% that month. It then collapsed to back under 1% before January was out. It is of note that, as the rally occurred so late in the year, the average lease rate for 2001 still ended up the lowest for the past five years.

There were three key features to price behaviour last year: the post-September 11 rally and other price spikes, to varying degrees the result of developments in the gold market; the December 2001/January 2002 lease rate-driven rally and, lastly, a continuation of the decline broadly in place since early 1998.

The rally that followed the September 11 attacks was the most dramatic of the year with the price, after a brief period of hesitancy, jumping from the low US$4.20s to an initial high of US$4.62/oz in just a week. Unlike gold, this period's maximum price was not the high for the year, although the scale of the rally was proportionately larger than that for gold. This was chiefly due to the funds on Comex being already respectably long of gold but roughly neutral in silver. The funds' silver position quickly changed as the gross short collapsed, few clearly wanting to be that side of the market in such tense times. This is seen very much as a case of silver riding the coat tails of gold. It is quite difficult to argue that silver has much safe-haven status; in this instance for example, prices soon slipped back to below pre-incident levels whereas gold has subsequently maintained a 'crisis premium'. Prices had also seen a modest rally in late May 2001 but, on this occasion, there was even less silver-specific reason for the move, which was due to silver shadowing the far more marked spike in gold.

The strongest rally of the year was that which followed the lease rate squeeze towards the end of 2001. This took silver from US$4.09 on November 28 to a high of US$4.85 on January 10 (2002). The surge came about through loco-London silver being shifted to allocated accounts by one or more large stockholders. That move drastically curtailed the supply of metal for lending, ramping up lease rates. These gains then rallied prices themselves, chiefly as high borrowing costs and resulting backwardation forced shorts to cover positions.

Prices up to December had been in decline for so long because of many factors, but the continuation of this trend for much of last year was mainly a result of the 5% fall in fabrication demand, largely due to the slowdown in world GDP growth. Fabrication's true weakness is highlighted by the fact that, without India's offtake gains, which came about largely in response to low prices, the global fall would have been half as large again. Poor demand also indirectly affected the market's balance as some countries saw the meltdown of unsold inventory, boosting scrap.

Supply

Overall silver supply fell noticeably last year. This fall in global supply was recorded despite a fairly robust performance on the mine production front: output was 274 t higher than in 2000, and reached a new record level of 18,351 t. However, countering this, for the first time in over a decade, there were virtually no net sales out of private sector bullion stocks.

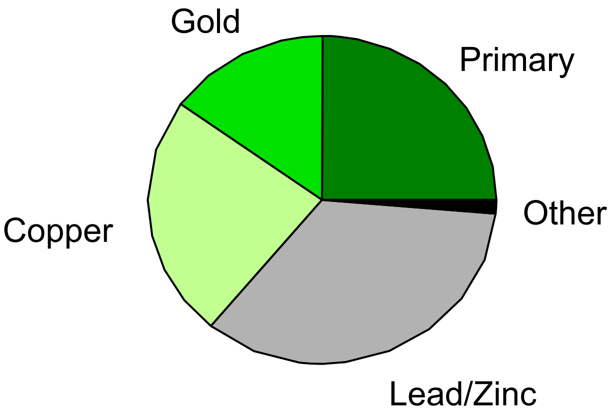
Analysis of the sources of silver mine production shows that three-quarters of output was generated as a by-product of other metals. Primary silver mines struggled under the pressure of a weak market environment, and it was largely thanks to the strong growth in output at Peñoles' primary mines that global primary production managed a small (less than 1%) rise year-on-year. Output from lead/zinc mines increased by almost 3% (lead/zinc mines generated 35% of all silver last year) and copper mines also increased their silver by-product (up 4% to 4,392 t, or 24% of the total). On the other hand, lower output from several US gold mines with substantial silver by-product led to a 4% fall in silver from this source. Gold mines generated 15% of the world's silver in 2001.

Mexican silver output increased modestly by just over 1% to reach 2,824 t. The narrow rise was perhaps a surprising result considering the surge in output from the country's and the world's biggest silver producer, Peñoles, which reported a 16% increase year-on-year to reach 1,609 t. This gain, however, was substantially offset by a decline in output from the informal mining sector. Last year, reports suggested that production from this sector dropped by around 25% year-on-year to an estimated 459 t.

In the US, declines from both primary silver and by-product mines left output a significant 17% lower year-on-year at 1,635 t. Production from primary silver mines was estimated to have fallen by 97 t year-on-year; there were production decreases at Lucky Friday, which was down 36%, whilst it was announced that the Sunshine mine had been permanently closed. Compounding declines from this source was lower output from gold operations, which decreased 210 t when compared with the previous year.

Canada, in contrast, recorded reasonably strong growth last year, with silver production more than 5% higher year-on-year at 1,235 t.

World Silver Mine Production by Source Metal



Source: GFMS

There are no primary silver mines operating in Canada, with over half of the country's silver sourced from gold operations and the balance, in roughly equal proportions, from copper and lead/zinc operations. The increase last year can largely be accounted for by higher output from gold mines.

Silver output in Central and South America increased last year by a substantial 11% to reach 4,679 t, accounting for just over a quarter of global silver production. There are three important silver producers in the region, namely Peru, Chile and Bolivia, which between them generated 95% of output in 2001.

Peru has experienced an average annual growth rate of 10% for the past three years and in 2001 reported record production of 2,674 t. The strongest growth was from the lead/zinc mines, which generated 59% of the country's silver, or 1,583 t. Perhaps the most significant contribution came from the new polymetallic Antamina mine (the world's third largest zinc mine and seventh largest copper mine), which added close to 120 t of silver. As regards primary silver producers, Buenaventura's Uchucchacua mine reported a 12% increase year-on-year to 304 t, whilst looking at gold mines, modest gains were made at Barrick's Pierina and Hochchild's Ares.

In Chile, the completion in 1999 of mining at Chimberos, the country's only primary silver mine, means that silver is now almost exclusively produced from gold (51%) and copper (48%) operations. Last year, silver by-product increased from both categories to leave the country's total at 1,349 t, an increase of 14% year-on-year.

Bolivian silver production declined moderately last year to 425 t, reflecting lower output from Comsur's Bolivar mine (down 8%) and the Kori Kollo gold mine (down 32%). On the other hand, output was close to double year-on-year in Argentina, as production at the new primary Martha mine boosted the country's total.

Europe's silver production increased by less than 1% in 2001 to reach 1,727 t - around 9% of global production. The largest contribution by far came from Poland, which accounted for over two-thirds of the region's total. Silver production from the country is principally generated by KGHM Polska Miedz as a by-product at its three underground copper mines and last year silver output here increased 4% to 1,163 t. Offsetting these gains somewhat was lower production from both Sweden and Spain, where silver output declined roughly 7% and 42% respectively.

For the third consecutive year, silver production increased from the countries that constitute the Commonwealth of Independent States (CIS). Last year output climbed a significant 8% year-on-year to reach 1,475 t. This growth was the result of an impressive rise in silver output from Kazakhstan, which accounted for 51% of the region's total silver production, reporting a remarkable 19% increase year-on-year to 755 t. All of the country's silver is produced at base metal operations, which have benefited from substantial investments over the past few years. Kazakhmys, for example, Kazakhstan's biggest copper producer, has been virtually transformed by targeted expenditure, primarily aimed at improving existing infrastructure and upgrading mining and processing facilities.

Kaztsink, the largest lead and zinc producer, also benefited from foreign investment (Switzerland's Glencore holds the controlling stake in Kaztsink via a local subsidiary).

Silver production in Russia was less than 1% lower than the previous year at 624 t. Silver output from gold operations increased modestly, with some of the gains coming from the new Julietta gold mine which came on stream in September.

Despite reports of a dramatic rise in silver mine production from China, it is clear from the surge in imported concentrates to the country that the significant increase in silver output was not generated locally. However, initial estimates for local silver output do show a modest rise, albeit less than 2%, to 1,520 t. Most of the growth is thought to have been as a result of higher domestic lead/zinc production, which generated around half of the country's silver in 2001, although some of the gains here were offset by lower copper output and unconfirmed reports of a decline in silver from primary operations.

A 4% decline left Australian output 90 t lower at 1,970 t. At Cannington, the world's biggest primary silver mine, production was 8% lower than the previous year at 933 t, mainly reflecting a decline in grades. Some of the losses at Cannington, however, were offset by higher production at Pasminco's Century zinc mine, which produced 74 t in its first full year of operation, and by improvements at Mount Isa where by-product silver from zinc and lead concentrates was 20% higher year-on-year at 368 t.

Output from Asia grew for the second consecutive year to stand at 739 t, a moderate 2% increase year-on-year. Almost 40% of the region's total is produced in Indonesia, where a significant quantity of silver is generated at the copper-gold mine Grasberg, which saw output increase last year by 11% to 133 t. This rise was matched by the increase in silver produced at the gold operations in the country, leaving the total up 10% to reach 289 t. Turkish production rose by a moderate 3% to 112 t, largely due to higher production at the primary 100th Anniversary mine. In Japan, a 22% decline in production reflected a drop in silver by-product from both lead/zinc and copper mining.

Initial reports suggest that output levels at Morocco's Imiter primary silver mine were maintained from the previous year with production at around 246 t. This is Africa's biggest silver mine, accounting for roughly two-thirds of the continent's total in 2001.

Above-Ground Stocks

Recycled above-ground stocks of bullion and scrap provided 8,507 t of silver to the market last year, a fall of over 16% on the level of the previous year. This decline was entirely brought about by the swing away from net disinvestment out of private bullion stocks. This shift was also more than enough to offset the reappearance of producer hedging as an element of supply

World Silver Supply and Demand (t)

Supply	**2000**	**2001**
Mine Production	18,077	18,351
Net Official Sector Sales	2,430	2,666
Old Silver Scrap	5,575	5,730
Producer Hedging	-	634
Implied Net Disinvestment	3,039	-
Total Supply	**29,121**	**27,381**
Demand		
Fabrication		
Industrial Applications	11,728	10,529
Photography	6,828	6,539
Jewellery and Silverware	8,752	8,944
Coins & Medals	926	846
Total Fabrication	28,235	26,859
Net Official Sector Purchases	-	
Producer Hedging	886	
Implied Net Investment	-	522
Total Demand	**29,121**	**27,381**

Source: GFMS

Last year saw silver scrap increase by 2.7% to reach 5,730 t. As in past years, the US remained the largest source of scrap, generating around 36% of the world total, followed by Japan (16%) and Germany (9%). The importance of US scrap is highlighted by the fact that, if we exclude the 131 t increase in its contribution last year, the rest of the world's scrap rose by only 0.5%. The 7% rise in the scrap supply from the US hides two underlying trends, which worked in opposing directions. On the one hand, the weakness of industrial fabrication demand resulted in some manufacturers recycling unsold inventory for use in their manufacturing process. This phenomenon, combined with an element of outright stock liquidation and sale back to the market, led to a tremendous rise in old scrap supply from industrial sources. On the other hand, scrap supply from the ethylene oxide catalyst market is estimated to have fallen last year, by some 20%.

After two consecutive annual declines in silver producer hedge books, last year witnessed a marked increase in the net outstanding global position. Although forward selling positions were virtually unchanged on a net basis, options positions expanded substantially. It was the delta hedging associated with these put and call options structures that generated almost all of the 634 t which found its way onto the physical market last year.

Government sales increased by a substantial 236 t to reach 2,666 t during 2001. As much as three-quarters of all sales originated from China, where government disposals continued for the third consecutive year. As for government sales from the rest of the world, the most significant contribution came from a further rundown in US Defense Logistics Agency (DLA) stocks. This silver was used in coins produced by the US Mint.

Finally, last year saw a swing away from significant levels of net disinvestment, which had been such a feature of the market during the 1990s as well as in 2000. This was primarily due to the weakness in the (dollar) price of silver and the unwillingness of private holders of bullion stocks to sell at those levels.

Demand

Last year, GFMS noted that one of the main factors behind the record level of offtake in 2000 was the strong rise in world GDP growth. In 2001 however, world economic growth slumped to its lowest level since the early 1990s. It is therefore not surprising that global fabrication fell back to below the 1999 level. Industrial and photographic demand was particularly affected, falling to three- and six-year lows respectively.

Industrial demand accounts for the largest part of total silver demand, and it was in this sector the decline stood out last year, falling by over 10% to 10,529 t. Not only was offtake affected by the economic downturn, but there was also a significant element of destocking. The electrical and electronics sectors were noticeably affected, with offtake falling by nearly one-fifth to 4,123 t. Nowhere was the collapse more evident than in the US and Japan, which posted declines of 33% and 27% respectively. (These two countries alone accounted for three quarters of the 1,024 t loss of demand from this category.) Elsewhere, the 8% fall in European industrial fabrication was due to poor domestic demand in a number of key markets.

At 4%, the decline in photographic demand was relatively modest, but 2001 was the second successive year in which silver offtake fell. There were four developments which were at work last year in the traditional silver halide market. First, the slowdown in world economic growth impacted on both consumer imaging and the graphic arts industry. Second, the fallout from September 11 not only postponed an economic recovery but directly resulted in a fall in travel, which further impacted on the consumer film market. Third, there was an element of stock carry-over (of both silver nitrate and film products) from late 2000, which reduced the need for fresh silver nitrate production in 2001. Finally, digital technologies appear to have made a minor contribution to the decline in silver offtake. Arguably, digital technology will make greater inroads into the silver halide market in future but, last year, the poor economic environment played a much greater role in determining the amount of silver used in photography.

One of the few bright spots on the demand side was the modest rise in the jewellery and silverware sector. It may be surprising to note that offtake was actually lower in nearly all of the major fabricating regions; but a modest increase in East Asia and, more significantly, a strong rise in the Indian sub-continent, left total demand up 2.2% at 8,944 t. The rise in Indian demand was mainly driven by the weak rupee silver price and a reasonably good monsoon. This took Indian jewellery and silverware fabrication from around 9% of total global demand in 2000 to nearly 12% last year. The rise in East Asian demand was mainly attributable to a close to 8% rise in Thai demand.

Top 10 Producing Countries by Output (t)

	2000	**2001**
Mexico	2,790	2,824
Peru	2,438	2,674
Australia	2,060	1,970
US	1,970	1,635
China	1,500	1,520
Chile	1,181	1,349
Canada	1,174	1,235
Poland	1,140	1,183
Kazakhstan	637	755
Russia	628	624

Source: GFMS

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