WORLD SILVER SURVEY 2016

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Industrias Peñoles, S.A.B. de C.V.

Pan American Silver Corp.

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Produced for The Silver Institute
by the GFMS team at Thomson Reuters

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ABOUT THE MAJOR SPONSORS OF WORLD SILVER SURVEY 2016

Coeur Mining, Inc.

Coeur Mining is the largest U.S.-based primary silver producer and a significant gold producer with five precious metals mines in the Americas employing approximately 2,000 people. Coeur produces from its wholly owned operations: the Palmarejo silver-gold mine in Mexico, the Rochester silver-gold mine in Nevada, the Kensington gold mine in Alaska, the Wharf gold mine in South Dakota, and the San Bartolomé silver mine in Bolivia. The Company also has a non-operating interest in the Endeavor mine in Australia in addition to royalties on the El Gallo complex in Mexico, the Zaruma mine in Ecuador, and the Correnso mine in New Zealand. In addition, the Company has two silver-gold exploration projects - the La Preciosa project in Mexico and the Joaquin project in Argentina. The Company also conducts ongoing exploration activities in Alaska, Argentina, Bolivia, Mexico, and Nevada. The Company owns strategic investment positions in several silver and gold development companies with projects in North and South America.

Fresnillo Plc

Fresnillo plc is the world's largest primary silver producer and Mexico's second largest gold producer, listed on the London and Mexican Stock Exchanges under the symbol FRES. Fresnillo plc has six operating mines, all of them in Mexico - Fresnillo, Saucito, Ciénega (including the San Ramón satellite mine), Herradura, Soledad-Dipolos[1] and Noche Buena; two development projects - San Julián and the Pyrites plant, and four advanced exploration prospects - Orisyvo, Juanicipio, Las Casas Rosario & Cluster Cebollitas and Centauro Deep as well as a number of other long term exploration prospects. In total, Fresnillo plc has mining concessions covering approximately 2 million hectares in Mexico. Fresnillo plc has a strong and long tradition of mining, a proven track record of mine development, reserve replacement, and production costs in the lowest quartile of the cost curve. Fresnillo plc's goal is to maintain the Group's position as the world's largest primary silver company, producing 65 million ounces of silver and 750,000 ounces of gold by 2018.

[1] Operations at Soledad and Dipolos are currently suspended.

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, a silver mining company founded in 1994, is currently the second-largest primary silver producer worldwide, with seven operating mines in Mexico, Peru, Bolivia and Argentina, as well as mineral deposits and projects in the USA, Mexico, Peru and Argentina. Our mission is to be the world's pre-eminent silver producer, with a reputation for excellence in discovery, engineering, innovation and sustainable development. Our team of industry-leading professionals has proven experience in exploration, project development, operations, and finance. In 2015, we produced a record 26.12 million ounces of silver and 183,700 ounces of gold at cash costs* of $9.70 per ounce of silver, and All-in Sustaining Costs per Ounce Sold ("AISCSOS")* of $14.92. In 2016, we expect to produce 24.0 to 25.0 million ounces of silver and 175,000 to 185,000 ounces of gold at cash costs* of $9.45 to $10.45 per ounce of silver, and AISCSOS* of $13.60 to $14.90. In addition we plan to spend between $65.0 and $75.0 million in sustaining capital and between $135.0 and $140.0 million on expansion projects, mainly at La Colorada and Dolores.

*net of by-product credits

Silver Wheaton Corp.

Silver Wheaton is the world's largest pure precious metals streaming company. The company offers investors cost certainty, leverage to increasing silver and gold prices, and a high-quality asset base. Its business model is based on paying low, predictable costs for precious metals streams from a diverse portfolio of mines, with any increases in precious metal prices flowing directly to the bottom line. Silver Wheaton offers these benefits while at the same time seeks to reduce many of the downside risks faced by traditional mining companies. In particular, it offers its investors both capital and operating cost certainty. Other than the initial upfront payment, the company typically has no ongoing capital or exploration costs. Furthermore, operating costs have been historically fixed at around $4 per ounce of silver produced and $400 per ounce of gold produced, subject to inflationary adjustments.

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This is the twenty-sixth annual edition of the World Silver Survey produced for The Silver Institute. The World Silver Survey is produced by the GFMS team at Thomson Reuters, globally-based analysts of the metals markets. The information contained herein is based in part on the analysis of publicly available data such as hallmarking series, trade statistics, company reports and other public-domain information. More importantly, it is also based on a series of interviews with the industry's main players, carried out every year by our team of analysts, which provide the essential data to allow the compilation of reliable estimates for world supply and demand.

Thomson Reuters 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", "$"	US dollar unless otherwise stated.
"Identifiable Investment"	The sum of physical bar investment and all coin fabrication, plus the net change in Exchange Traded Product (ETP) holdings.
"Physical Surplus/ Deficit"	The difference between the supply of new and secondary silver to the market in a calendar year and measurable demand for physical silver. This excludes opaque Over the Counter (OTC) investment in silver and commercial bank transactions.
"Net Balance"	The physical surplus or deficit of silver with the addition of highly visible ETP and exchange stock inventory changes.

PRICES:

Unless otherwise stated, US dollar prices are for the London Silver Market fixing prior to August 15, 2014. As of this date prices refer to the LBMA Silver Price as successor to the silver fix.

TABLE ROUNDING:

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

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FOCUS BOXES

1. SUMMARY AND OUTLOOK

In 2015, silver retail investment and jewelry fabrication hit a record high and mine production growth declined to its slowest pace in four years. The silver market realized an annual physical deficit for the third consecutive year in 2015. The market's deficit of 129.8 Moz (4,038 t) was more than 60% larger than the previous year's deficit of 78.6 Moz (2,445 t) and the third largest on record. Meanwhile, silver prices averaged $15.68/oz, down 17.8% from 2014, the fourth consecutive annual drop.

Silver prices were dragged lower by investor expectations for an interest rate hike in the United States and a weakening Chinese economy. These two factors negatively impacted silver because of its dual nature as a financial asset and an industrial commodity. Money manager positions in COMEX silver futures and options fell into negative territory in the third quarter of last year amid relatively low prices and industrial fabrication demand for silver slipped by 4% mostly due to a 9% drop in China. The equity market decline in China also weighed on investor sentiment.

Investors took last year's price declines as an opportunity for bargain hunting in the physical market, however, accumulating 292.3 Moz (9,092 t) of coins and bars, a 24% surge from the previous year. This increase followed a 2% decline in 2014. The acceleration of physical purchases last year was triggered by silver's drop toward multi-year lows, which boosted coin buying, and a subsequent shortage of national mint coins globally. The shortage emerged first in North America, when the U.S. Mint halted sales of American Eagles for almost three weeks in July due to depleted inventory. Shortages and rationing quickly spread to the Royal Canadian Mint, the Perth Mint, the Austrian Mint, and others. Arguably, the systemic shortage across the silver coin minting industry was unprecedented.

In the first quarter of 2016, although safe haven demand was the primary driver, the relatively stronger market fundamentals acted as a spring board for silver prices, particularly given the continued elevated demand for coins and swelling concern about mine supply reduction in the future.

TABLE 1 - WORLD SILVER SUPPLY AND DEMAND

(million ounces)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Supply										
Mine Production	643.4	667.7	684.7	717.3	753.0	757.6	790.8	823.7	868.3	886.7
Net Government Sales	78.5	42.5	30.5	15.6	44.2	12.0	7.4	7.9	-	-
Scrap	207.1	204.2	202.0	201.2	227.5	261.5	255.5	192.1	168.3	146.1
Net Hedging Supply	-11.6	-24.1	-8.7	-17.4	50.4	12.2	-47.1	-34.8	16.8	7.8
Total Supply	**917.3**	**890.3**	**908.6**	**916.7**	**1,075.2**	**1,043.3**	**1,006.6**	**988.9**	**1,053.3**	**1,040.6**
Demand										
Jewelry	174.5	182.3	177.6	176.9	190.0	187.9	185.4	217.8	224.0	226.5
Coins & Bars	50.7	56.1	192.3	91.6	144.4	210.4	160.5	242.1	236.1	292.3
Silverware	62.1	60.2	58.4	53.2	51.6	47.2	43.7	58.8	60.7	62.9
Industrial Fabrication	648.9	661.0	656.8	542.6	650.3	676.3	615.0	619.1	611.2	588.7
....of which Electrical & Electronics	242.3	262.5	271.7	227.4	301.2	290.8	266.7	266.0	263.4	246.7
...of which Brazing Alloys & Solders	54.7	58.3	61.6	53.6	60.9	62.7	60.6	63.2	66.1	61.1
...of which Photography	142.2	117.0	98.2	76.4	67.5	61.2	54.2	50.5	48.5	46.7
...of which Photovoltaic*	-	-	-	-	-	75.8	62.9	62.5	63.2	77.6
...of which Ethylene Oxide	6.6	7.9	7.4	4.8	8.7	6.2	4.7	7.7	5.0	10.2
...of which Other Industrial*	203.1	215.3	217.9	180.4	212.1	179.4	165.8	169.3	165.1	146.4
Physical Demand	936.3	959.6	1,085.1	864.2	1,036.4	1,121.8	1,004.6	1,137.9	1,131.9	1,170.5
Physical Surplus/Deficit	**-19.0**	**-69.3**	**-176.6**	**52.5**	**38.8**	**-78.5**	**2.0**	**-149.0**	**-78.6**	**-129.8**
ETP Inventory Build	126.8	54.8	101.3	156.9	129.5	-24.0	55.3	2.5	1.5	-17.7
Exchange Inventory Build	-9.0	21.5	-7.1	-15.3	-7.4	12.2	62.2	8.8	-8.8	0.3
Net Balance	**-136.8**	**-145.5**	**-270.7**	**-89.2**	**-83.3**	**-66.7**	**-115.5**	**-160.2**	**-71.3**	**-112.5**
Silver Price, $ per oz.	11.55	13.38	14.99	14.67	20.19	35.12	31.15	23.79	19.08	15.68

*Photovoltaic demand included in "Other Industrial" prior to 2011

WORLD SILVER SURVEY: SUPPLY AND DEMAND METHODOLOGY

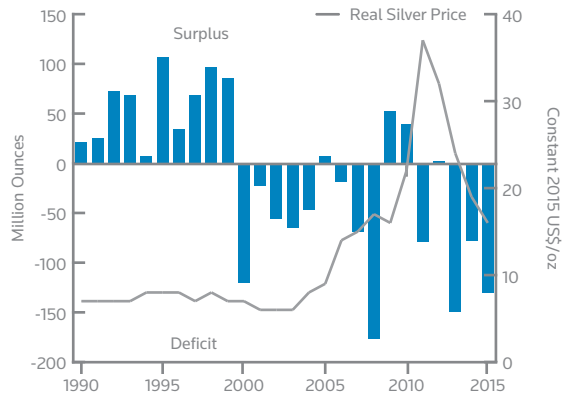
Physical surpluses and deficits in the silver market explain and sometimes, to an extent, influence price trends, lead times, margins and premia. These physical surpluses and deficits are not the only factor driving short term price movements, however, because unlike the purely industrial metals there is significant demand for silver as a financial asset. We estimate that in 2015, 25% of demand for new silver came from the physical coin and bar sector as investors increased private holdings. Coin and bar demand excludes investment in silver via exchange traded products. Many of these products are backed by physical silver held in bank vaults and depositories. Changes in these holdings are reflected in a separate data series in our supply-demand balance, but nonetheless also represent a source of physical investment.

In addition to physical investment, silver has an active Over-the-Counter (OTC) market, serving as a mechanism for risk and price management. OTC trade can have a meaningful impact on silver prices because of the market's depth. In 2015, the volume of silver transferred in the London bullion market, the largest OTC market for silver worldwide, totaled approximately 36.8 billion troy ounces (1.14 M t), with a value of $575 billion, according to data published by London Bullion Market Association. Even this figure does not represent the total value of global silver transactions. As a rule of thumb, these net transfers, which exclude physical movements arranged by clearing members in locations outside London, are roughly one half of the total loco London market volume, which in turn makes up approximately 90% of global total turnover. In 2015, therefore, total volume was of the order of 81.7 billion ounces (2.54 M t) with a value of $1.3 trillion; this is equivalent to over 90 times annual mine production.

The final element that differentiates silver from purely industrial metals is that it is commonly recycled or held as an above-ground asset by private and institutional investors, users, dealers, banks, and other entities. Shifts in these inventories, whether accumulations or sales into terminal markets, affect prices as well.

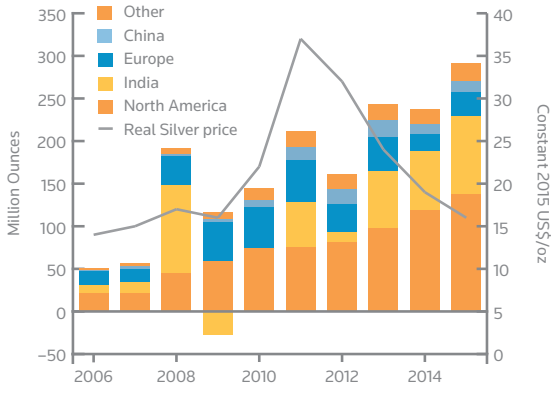
Thomson Reuters' supply and demand data are collected and collated by a team of full time research analysts based in Australia, China, the United Kingdom, India and the United States within an extensive field research program that involves interviewing stakeholders across the supply chain. In order to build market statistics, the GFMS team at Thomson Reuters maintains individual demand databases for over 85 countries globally and for almost 600 mines and projects on the supply-side. As part of the primary research program, analysts collect information on jewelry and silverware fabrication, coin fabrication and sales, bar sales, industrial fabrication, refining volumes, shifts in above ground bullion stocks, and scrap sales. In addition to this, on a global basis, Thomson Reuters also collects information and data on net government sales and purchases and collates producer hedging and de-hedging levels.

SILVER PHYSICAL SURPLUS / DEFICIT



Source: GFMS, Thomson Reuters

WORLD COIN AND BAR DEMAND



Source: GFMS, Thomson Reuters

SUPPLY IN 2015

- ***Global mine production growth slowed to 2% last year, setting a record annual total of 886.7 Moz (27,579 t).***

- ***Gains in mine supply were more than offset by weak scrap supply, falling by 13% year-on-year and representing a 22.2 Moz (691 t) decline.***

Worldwide silver **mine production** increased for a 13th consecutive year to a record high of 886.7 Moz (27,579 t), although the rate of growth, at 2%, was less than half that of the previous three years. Notable country-level increases included Peru, Argentina, Russia and India. Providing an offset are examples of situations where price-driven curtailments are starting to impact silver supply, most materially so far in Canada, Australia and, to a lesser extent, in Bolivia. Chinese production, meanwhile, dipped by 3%, and it is likely that policy announcements made last year will drive further reductions in small scale production and enhance demand for imported silver-rich concentrate. However, there have also been incidences where lower commodity prices have driven downstream optimization in order to realize enhanced value from the production process. Examples from the lead/zinc industry include the sale of precious metals tied up in stockpiles at the Cerro de Pasco following the construction of a silver leach plant in Peru, and a program to sell accumulated pyrite concentrate at Bisha in Eritrea; these two initiatives alone added 3.5 Moz (109 t) of production last year.

Multi-year price lows led to **scrap** supply dropping by 13%. Behind the decline were fewer collectors active in the market and some processors held back material awaiting higher prices. As a result, scrap fell to its lowest since 1992, of 146.1 Moz (4,545 t). Indeed, if it was not for many emerging markets' currencies weakening appreciably supply would have been even lower.

The producer community added silver hedges last year, to leave the **hedge book** amounting to 38.9 Moz (1,213 t). GFMS calculates that delta hedging activities on behalf of the producers created 7.8 Moz (244 t) of accelerated silver supply over the year. The greatest contributions to this came from additional price risk management by Industrias Peñoles and Hochschild Mining.

DEMAND IN 2015

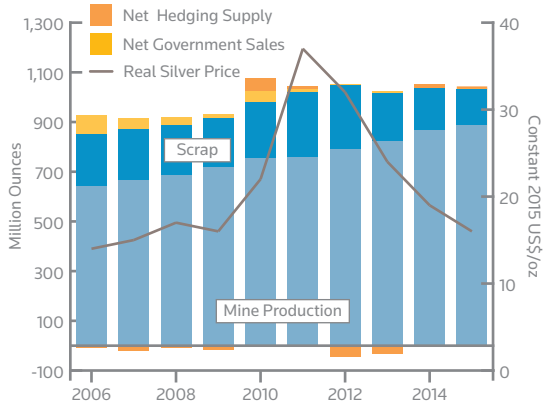
- ***Total physical demand rose to a record high of 1,170.5 Moz (36,405 t) in 2015, up 3% from the previous year.***

- ***The largest contributor to total demand growth was coin and bar investment, which surged 24% last year to reach a record high of 292.3 Moz (9,092 t), on the back of strong North American and Indian purchases.***

- ***Jewelry fabrication increased for the third consecutive year and hit a fresh record high of 226.5 Moz (7,045 t). Strong growth in Indian and North American fabrication offset a near one third drop in Chinese fabrication.***

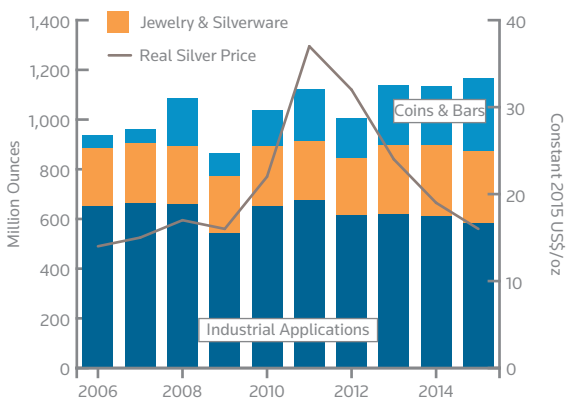
- ***Industrial fabrication fell to 588.7 Moz (18,311 t), down 4% from the previous year. Declines in electronics, brazing alloys & solders, and photography were offset to an extent by record high solar and ethylene oxide catalyst demand.***

WORLD SILVER SUPPLY



Source: GFMS, Thomson Reuters

WORLD SILVER DEMAND



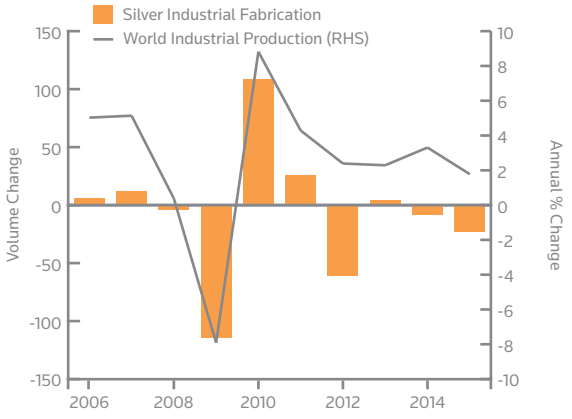
Source: GFMS, Thomson Reuters

Total **physical demand** saw a 3% increase in 2015, driven by higher retail investment, jewelry and silverware fabrication and solar and ethylene oxide catalyst demand. Growth from these sources was offset to a modest extent by weaker demand from the electronics, brazing alloys and solders, and photographic sectors. Bargain buying benefited coin and bar demand and jewelry and silverware demand, while industry-specific factors weighed on demand from the other sources.

Global **industrial offtake** totaled 588.7 Moz (18,311 t) in 2015, a 4% decline from the previous year, to post its lowest level since 2009. Increases in photovoltaic and ethylene oxide (EO) demand were more than offset by lower demand for silver in electronics and electrical components, photographic papers, brazing alloys and solders and other miscellaneous applications. Global industrial production grew at its weakest annual rate since 2009, and the economic slowdown in the largest market, China, as well as ongoing thrifting ensured that global industrial usage fell. On a regional basis, weak fabrication demand in developing countries outweighed almost non-existent growth in developed countries.

Silver used in **photographic** applications continued to decline, falling by 4% in 2015, to 46.7 Moz (1,452 t), the lowest level in our series, which began in 1990. To put this into perspective, last year's level was down by 77% from the record high at the start of the millennium. That said, it is worth emphasizing that the pace of decline slowed considerably, to its lowest rate since 2004, as the structural changes in the sector towards digital technology approach maturity.

SILVER INDUSTRIAL FABRICATION



Source: GFMS, Thomson Reuters; Oxford Economics

Photovoltaic (PV) demand for silver totaled 77.6 Moz (2,415 t) in 2015, up a significant 23% from the previous year. This marks the second consecutive year of increases in this sector, driven by a recovery in growth from all three primary markets after years of excess capacity, while growth was particularly strong for Chinese solar panel installations.

Silver **jewelry** fabrication edged higher in 2015, rising 1% to a new record level of 226.5 Moz (7,045 t). The increase was built largely on the back of an impressive 16% annual rise from India as lower prices drove consumption and industry inventory levels significantly higher. However, India's performance was largely curtailed by another sizable contraction in Chinese fabrication last year as the weaker economy dampened discretionary spending. Elsewhere, Thailand enjoyed a 16% jump in demand, boosted by a stronger export sector while North America also recorded a healthy 5% annual increase as lower sticker prices attracted consumers. Demand was broadly stable in Europe, while the Middle East retreated 7%. **Silverware** fabrication enjoyed the third annual rise in succession to an estimated 62.9 Moz (1,957 t), a ten-year high. Record offtake levels from India again provided the platform for the 4% rise in global demand, while further falls from China, due largely to the changes to the gifting culture, limited further industry expansion.

Identifiable Investment, which includes physical bar investment, coins & medals and ETP inventory build, rose by 16% last year, to a seven-year high of 274.7 Moz (8,543 t). A close analysis of individual components of our identifiable investment figure reveals that last year's rise was primarily due to a jump in coin and bar investment, which recorded a 24% year-on-year increase to 292.3 Moz (9,092 t), the highest annual demand level in our records, overtaking the previous record high in 2013. Meanwhile, ETP investment recorded outflows, declining by 17.7 Moz (549 t) over the course of the year and finishing the year at 617.8 Moz (19,217 t).

Silver coin fabrication rebounded in 2015, rising by 24%, following an 8% decline in 2014, to bring total **coins and medals** fabrication to 134.1 Moz (4,172 t), the highest level in our records. Purchases were driven by silver price weakness in the second half of the year, with third quarter purchases recording a historical all time high.

2. SILVER PRICES

- ***The LBMA silver price averaged $15.68/oz in 2015, a 17.8% decline year-on-year and its lowest annual average level since 2009. Prices traded in the $13.71/oz-$18.23/oz range, beginning the year at $15.97/oz and ending it at $13.82/oz.***

- ***Despite the price volatility, silver prices at the end of the first half of 2015 were barely changed from the start of the year, recording a less than 2% decline. However, as the expectation increased that the Fed would raise interest rates by the end of the year, silver prices fell 12% in the second half.***

At the beginning of 2015, silver prices were being aided by gold strength, when gold rose above $1,300/oz. Investors sought gold and other safe haven assets ahead of the expected stimulus by the European Central Bank (ECB). Silver rose as much as 14.2% in the first three weeks of the year as the euro fell to an 11-year low against the dollar and the Swiss central bank abandoned the franc's peg against the single-market currency. The renewed flaring up of the Greek debt crisis following the election of the SYRIZA party also fueled market concerns. Weaker than expected economic conditions in the United States during the first quarter certainly did not help either. These factors resulted in a resurgence of investor interest in gold and silver amid forecasts of weak global growth and fears that the ECB would not be able to revive the Eurozone economy. Silver prices closed January 23rd at $18.23/oz, its highest in 2015. While silver softened when concerns over the Eurozone economy began to ease, silver prices still managed to remain above the $16/oz level for most of the first half of 2015.

Silver prices began to trend lower in the latter half of June and this decline accelerated in the third quarter, when silver dropped 6.7% during the period and closed at $14.65/oz at period-end. The managed money position on COMEX silver futures and options turned into a net short towards the end of June and remained so until the second week of August, the first time the position had been net short since the end of September 2014. Markets began to speculate about whether a rise in interest rates by the U.S. Federal Reserve (Fed) could be imminent, in conjunction with turmoil in emerging markets, causing weakness across various investment sectors. Further disappointing economic figures from China also cast a pall over commodities. However,

US$ SILVER PRICE

	1985	1995	2005	2015
Annual Average	6.13	5.20	7.31	15.68
Maximum	6.75	6.04	9.23	18.23
Minimum	5.45	4.42	6.39	13.71
Range:Average	21.2%	31.2%	38.8%	28.8%

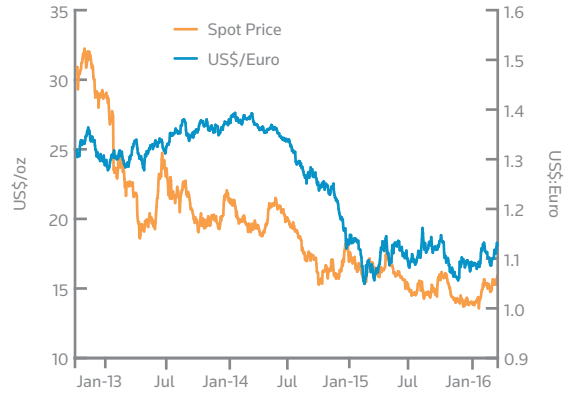
Source: LBMA; GFMS, Thomson Reuters

THE SILVER PRICE IN OTHER CURRENCIES IN 2015

	Euro/kg	Rupee/kg	Yen/10g	Yuan/kg
Annual Average	454.19	36,501	609.9	3,166
Maximum	522.98	40,560	690.8	3,650
Minimum	401.00	33,200	533.4	2,850
Range:Average	27%	20%	26%	25%

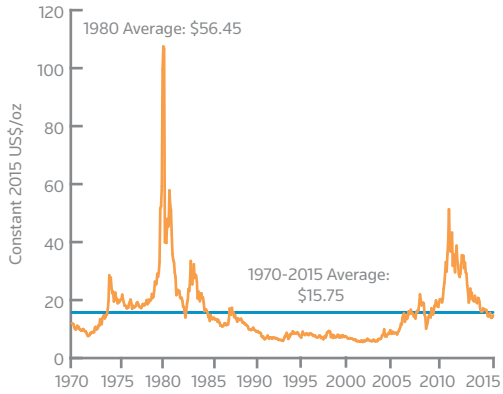
Source: GFMS, Thomson Reuters

THE SILVER PRICE AND THE U.S. DOLLAR



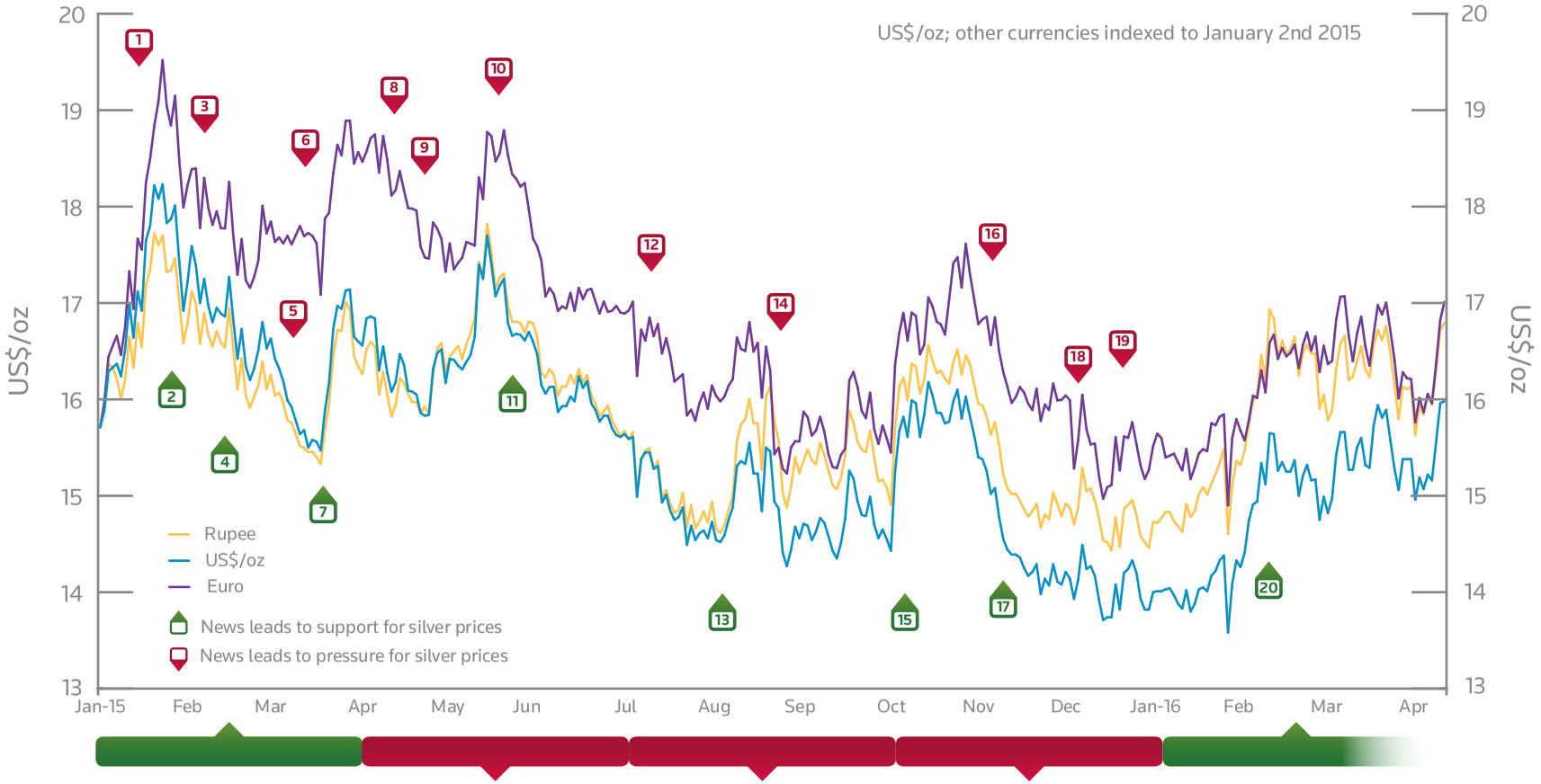
Source: Thomson Reuters Eikon

MONTHLY REAL SILVER PRICES ($2015)



Source: Thomson Reuters Eikon; GFMS, Thomson Reuters

LONDON SILVER MARKET: SPOT PRICE



1 (01/12/15): Chinese funds aggressive short-selling

2 (01/15/15): SNB abandons cap on the franc.

3 (01/29/15): Fed confirms rate hike plans for 2015

4 (02/05/15): PBOC cuts RMB deposit reserve ratio

5 (03/06/15): Upbeat U.S. NFP data fuels speculation of an early rate rise

6 (03/18/15): Slow Chinese demand recovery after Lunar New Year and dollar strength

7 (03/18/15): Fed signals cautious outlook for U.S. economy

8 (04/22/15): Strong U.S. housing data; fears over a June rate hike loom. Tensions in Yemen ease.

9 (04/23/15): Weak Chinese manufacturing data

10 (05/19/15): ECB announces it may accelerate its euro bond buying-program; euro tumbles.

11 (05/25/15): Greek worries over a possible default spread; talks with lenders contnue.

12 (07/07/15): Greek debt crisis and Chinese equity market losses

13 (08/10/15): China rattles market with surprise yuan devaluation

14 (08/25/15): U.S. consumer confidence hits 7-month high; China cuts rates.

15 (10/12/15): Glencore production cuts and asset sales

16 (11/10/15): Short-selling by Chinese funds amid weak Chinese credit data

17 (11/13/15): Terrorist attack in Paris, ISIS claims responsibility.

18 (12/16/15): Fed raises rates for the first time since 2006.

19 (12/22/15): U.S. Q3 GDP grows at 2.0%

20 (02/11/2016): Tighter credit markets and uncertainty over Chinese economic growth worry investors; gold, silver, bonds and Japanese yen rise in tandem.

Source: GFMS, Thomson Reuters

the non-event that was September's Fed meeting, with the Fed also showing worries about the global economy and financial market volatility, did provide some price support for silver.

After the Fed's September meeting, silver prices rebounded somewhat in October, not only climbing back above the $15/oz level, but also beyond the $16/oz level on some days. Markets began to speculate as to whether the Fed would raise interest rates at all in 2015, given that the Fed, at that stage, seemed to have placed heavier weight on developments abroad on its monetary policy decision.

However, the hawkish FOMC statement in October caught the market by surprise, as the Fed removed warnings about global economic and financial developments that might hold back the U.S. economic recovery and put downward pressure on inflation in the near term. This sent signals to the market that a rate rise was possible during the last meeting of the year. Following the statement, the U.S. dollar strengthened and was trading at near three-month highs. Precious metals came under renewed selling pressure, with silver down 5% from the previous trading session's high. While the managed money position in gold turned net short in late November and remained so for the rest of 2015, the net position in silver remained long. The Fed announced a quarter-point increase in the target range for the federal funds rate during its last meeting of the year on December 16th; silver prices rebounded initially after the announcement, but further consolidation followed and it closed the year at $13.82/oz.

VOLATILITY (US$ PRICE)

	2012	2013	2014	2015
Annual	29%	32%	22%	24%
	15.Q1	**15.Q2**	**15.Q3**	**15.Q4**
Quarterly	27%	21%	24%	24%

Source: GFMS, Thomson Reuters

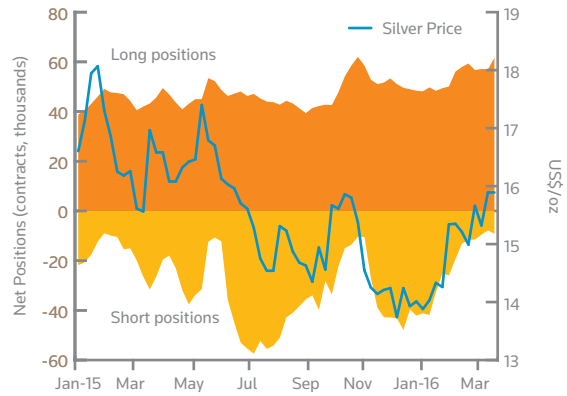
Silver price volatility inched marginally higher, to 24.1%, in 2015, from 22% the previous year although volatility remained well below that seen in 2011, when the annual rate reached 61%. Monthly price volatility ranged from a high of 32.7% in January to a low of 13.1% in June.

CHINESE SILVER PREMIA

All the silver prices quoted on the domestic futures exchanges in China are inclusive of a 17% Value Added Tax (VAT). While fabricators, after adding value to the silver, can usually recoup most of the VAT paid from their downstream partners, this tax is eventually paid by the consumers.

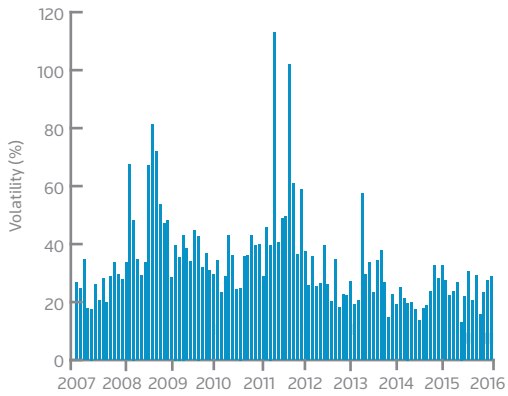
Silver prices quoted on the Shanghai Gold Exchange (SGE) dropped 6.9% in Chinese yuan terms last year, which compares to the 17.8% drop in U.S. dollar prices. Benefited by the official depreciation of the Chinese yuan in August, Chinese silver premia (including the 17% VAT) increased slightly from $1.12/oz in 2014 to $1.23/oz in 2015, despite weaker demand overall due to worsening domestic economic conditions, especially towards the end of the year. Silver inventories at the Shanghai Futures Exchange (SHFE) increased from 3.8 Moz (119 t) at the end of 2014

COMEX LONG AND SHORT MANAGED MONEY POSITIONS



Source: CFTC

DAILY SILVER PRICE VOLATILITY



Source: GFMS, Thomson Reuters

to 19.2 Moz (596 t) a year later, while inventories at the SGE increased from 3.3 Moz (103 t) to slightly less than 16.1 Moz (500 t) during the same time frame. The total increase of 28 Moz (871 t) inventories at both exchanges reflected the sluggishness of the Chinese economy.

The average silver premia on the SGE have shrunk to $0.95/oz for the first quarter of 2016, which we believe is coupled with the continual soft demand for silver from the domestic market, and the yuan showing strength since mid-February. After further depreciation of the Chinese currency in January (trading as high as 6.59 against the dollar on January 7th), the Chinese currency appreciated over 1% (6.49 against the dollar) by the end of the first business day after the one-week long Spring festival holiday. Further dollar weakness in late March after the dovish statement made by the Fed propelled the yuan even higher. However, the long term trend of yuan depreciation remains intact unless the Chinese economy dramatically improves. Chinese silver premia could possibly regain the levels seen in the last two years once the pace of the yuan depreciation picks up again.

SILVER IN OTHER CURRENCIES

While silver prices fell 13.5% in U.S. dollar terms last year, basis intraperiod, prices fell 3.6% and 13.0% in euro and in yen terms respectively. Meanwhile, silver prices in India dropped 8.4% in domestic terms.

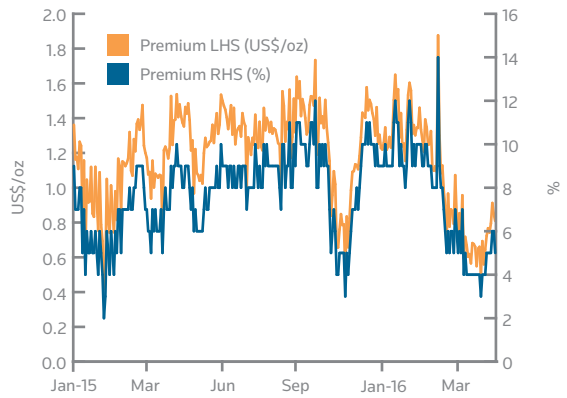
All these were reflections of a stronger dollar last year, with the market spending most of the time speculating on the Fed's interest rate timetable, while other major economies continued to expand their quantitative easing programs or made further interest rates cuts in 2015. The U.S. dollar index, which weights the strength of the dollar against other currencies, started the year at 90.3, and ended the year at 98.6, recording a 9.3% appreciation during the year.

GOLD:SILVER RATIO

The gold:silver ratio began 2015 at 74.1, traded between 70 and 78.9 throughout the year, and ended the year at 76.8. That makes the ratio average 74.0 for the full year, a 10.9% increase from the 2014 average. While at first glance many would have thought that last year it was the Fed's interest rate timetable that had dictated the pricing of commodities, in reality the ratio is telling us more, as the commodities market was signaling a global slowdown. Throughout history, the gold:silver ratio has tended to be very high during certain periods of time encompassing major wars, economic recessions or market panics.

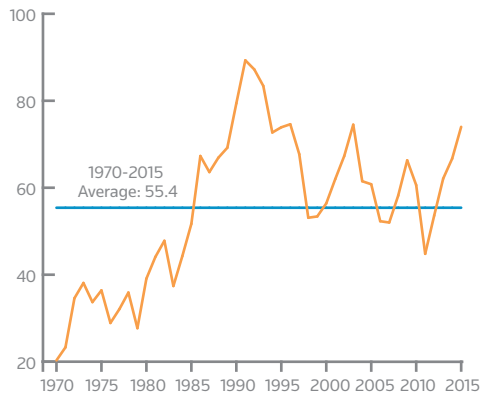
The signal was stronger in the second half of 2015, when the gold:silver ratio averaged 75.1, compared to 72.9 in the first half. Concerns over global market slowdown, as evidenced by the weakening Chinese economy and other emerging markets, ensured that the ratio continued on an upward trend. In fact, the ratio exceeded 80.0 for quite some time during the first quarter of 2016, in conjunction with meltdown in the global equities market. By the middle of March, however, as strong rebounds in global equities were seen across the board, the ratio retreated back below 80 for a brief period of time. The ratio was hovering around 80 by the end of March.

SGE SILVER PREMIA



Source: Shanghai Gold Exchange; GFMS, Thomson Reuters

THE GOLD / SILVER PRICE RATIO



Source: Thomson Reuters Eikon

SILVER AND OTHER COMMODITY PRICES

The analysis of correlation coefficients provides information about prevailing underlying themes influencing prices. 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.

As expected, silver's strongest sustained relationship remained with gold over the course of 2015 and the first quarter of 2016. During the first quarter of 2015, both gold and silver behaved like safe haven assets amid market uncertainties regarding the future of the Eurozone and weaker than expected economic figures from the United States. The risk averse market sentiment had many other commodities, including base metals and oil, suffering from set-backs during the time period. As a result, silver had negative correlations with most of these assets during the first quarter..

Silver, along with most commodities and equities markets, began to show weakness in mid-May. The weakness was attributed to the meltdown of the Chinese equities market, which sent shock waves across the investment sector. Silver's correlation with copper increased during the quarter, as both are considered as industrial metals, and under heavy influence of the Chinese economic activities. Silver's correlation with oil remained in negative territory however, as the oil price posted a 25% quarterly gain.

The hawkish October FOMC statement caught the market by surprise. Following the statement, the dollar strengthened and was trading at near three-month highs. Silver and other commodities came under renewed selling pressure. Silver's strong correlation with other commodities during the final quarter, and the strong negative correlation with the dollar index, suggested that commodity prices were weighed down by the Fed's rate hike decision.

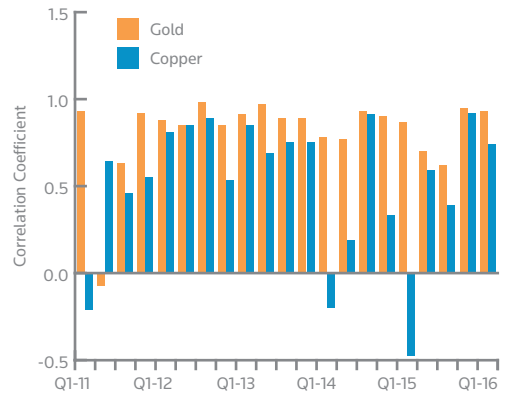
As 2016 started, disappointing December economic data from the United States, coupled with meltdowns in global equity markets, sent the financial markets back into panic mode. Once again, gold and silver behaved like safe haven assets. While equity markets and certain commodities began to rebound in February and March, gold and silver still managed to hold at elevated levels. The market expectation for the interest rate path in the United States was adjusted in March from four rate hikes to two, which sent the dollar index downward. Strong rebounds developed across various commodities on a weakened dollar. The Fed's interest rate timetable may continue to influence price trends heavily across various asset classes throughout 2016, including silver.

CORRELATIONS OF CHANGES IN DAILY PRICES

	Q1 15	Q2 15	Q3 15	Q4 15	Q1 16
Gold	0.87	0.70	0.62	0.95	0.93
US$ Index	-0.35	-0.05	-0.05	-0.75	-0.85
Oil (WTI)	-0.16	-0.08	0.32	0.84	0.42
CRB Spot Metals	0.42	0.50	0.25	0.85	0.85
GSCI	-0.42	0.08	0.44	0.84	0.64
Copper	-0.48	0.59	0.39	0.92	0.74
S&P 500	-0.30	0.29	0.27	-0.13	0.41

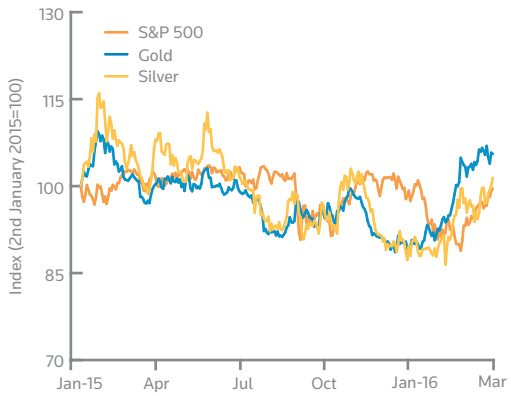
Source: GFMS, Thomson Reuters

QUARTERLY CORRELATION OF THE SILVER PRICE



Source: Thomson Reuters Eikon; GFMS, Thomson Reuters

GOLD & SILVER PRICES & S&P INDEX



Source: Thomson Reuters Eikon

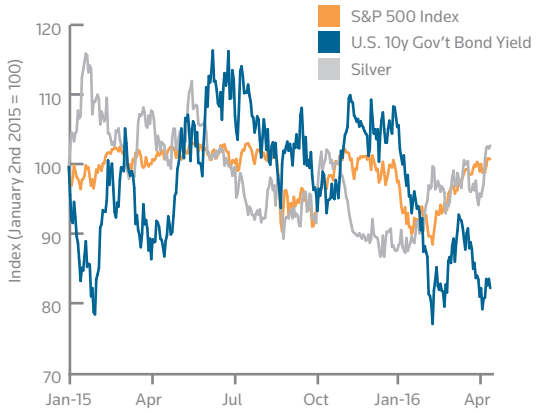
3. INVESTMENT

- ***Identifiable Investment, which includes physical bar investment, coins and medals and changes to ETP holdings, rose 16% to a near record high of 274.7 Moz (8,543 t) in 2015.***

- ***Coin and bar investment hit a record high of 292.3 Moz (9,092 t), up 24%, while investors sold a net 17.7 Moz (549 t) from ETP holdings.***

- ***In 2015, annual identifiable investment fell by 5% to an estimated $4.3 billion, a much smaller decline compared to 2013 and 2014 of 13% and 22%, respectively.***

EQUITY, FIXED INCOME, & SILVER PERFORMANCE IN 2015



Source: Thomson Reuters Eikon

OVERVIEW

Identifiable investment, which consists of physical bar investment, coins & medals purchases, and additions or drawdowns to ETP holdings, increased to 274.7 Moz (8,543 t) last year, up 16% from the previous year. This was the highest level of identifiable investment since 2008 and the strongest annual rise since 2010. This increase was despite a reduction in ETP holdings, which fell for the first time on an annual basis since 2011.

Coin and bar investment hit a record high of 292.3 Moz (9,092 t) last year, up 24% from the previous year. Coin purchases increased 24% and totaled a record high of 134.1 Moz (4,172 t). Coin demand rose strongly in all regions, with North America accounting for 31% of growth, Asia for 28%, Europe for 23%, and Oceania for 17%. Strong growth was initially driven by bargain buying amid relatively low prices, but growth catapulted as mints ran out of coin inventories and could not produce enough coins to meet the pace of demand throughout the second half of the year. The U.S. Mint announced a halt in sales in July and for several weeks thereafter mints were extending lead times for delivery, adding production shifts to their operations, and placing sales on allocation. The shortage in official coin supply in the period between July and September was unprecedented and systemic across the minting industry.

Bar purchases rose at a slightly stronger pace of 24% to total 158.2 Moz (4,920 t), also a record high. Growth in bar sales piggybacked off strong demand for coins. Because coin demand could not be satiated, investors turned to other silver bullion investment products such as small bars and "rounds," which are coins produced by private mints. Rounds typically have low premia similar to bars. It should

WORLD IDENTIFIABLE INVESTMENT

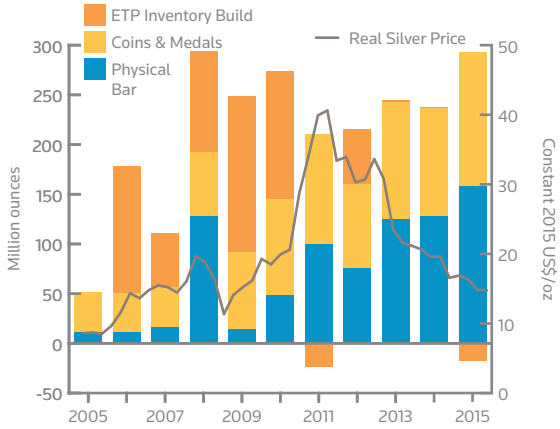
(million ounces)	2013	2014	2015
Physical Bar Investment	125.3	128.1	158.2
Coins & Medals	116.9	108.0	134.1
ETP Inventory Build	2.5	1.5	-17.7
Total Identifiable Investment*	**244.6**	**237.6**	**274.7**
Indicative Value US$(bn)**	**5.8**	**4.5**	**4.3**

* Identifiable Investment is the sum of investment in physical bars, coins & medals as well as the build in ETP holdings and hence is all the quantifiable forms of investment.

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

Source: GFMS, Thomson Reuters

WORLD IDENTIFIABLE INVESTMENT



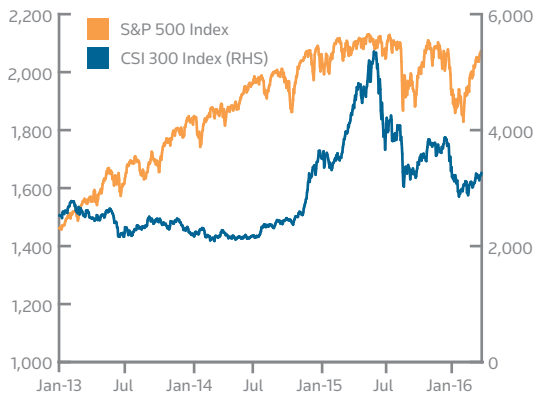
Source: GFMS, Thomson Reuters

be noted that North American bar demand was revised upward due to incredible demand growth for this product in recent years. The scale of revision was considerable, from 10.8 Moz (337 t) to 42.2 Moz (1,314 t) in 2014. Rounds have been increasingly popular because the demand for coins has been chronically exceeding supply in the region. The commissioning of new private minting operations has given way to an easing of this bottleneck.

In contrast to strong demand for physical coins and bars, investors in ETPs reduced holdings by 17.7 Moz (549 t) last year. This selloff was the first drop in holdings of silver ETPs since 2011 when investors offloaded 24.0 Moz (747 t). However, ETP holdings totaled 617.8 Moz (19,217 t) by year-end, which was equivalent to about 70% of annual mine supply. Additionally, CFTC data suggest that money managers went net short COMEX silver futures and options last year for a period of seven weeks in the third quarter.

As is usually the case, the contrast between physical purchases and futures and options activity implies that investments in the physical market last year were dominated by longer term buyers, who saw relatively low prices as an attractive entry point. Meanwhile, trading activity on exchanges was dictated by shorter term responses to weakening market conditions. The declines in net long money manager positions in COMEX futures and options largely were anticipatory on the back of a looming rate rise by the Federal Reserve U.S. Ahead of the Federal Reserve's September meeting, investors began to price a rate rise into metals prices. Another major factor weighing on investor interest during the third quarter was the equity crash in China. Money manager positions fell into negative territory in late June through the beginning of August. This bearish activity coincided with a large drop in Chinese equity values. The CSI 300 Index, comprised of stocks traded on Shanghai and Shenzhen stock exchanges, surged 47% from the beginning of the year to a peak of 5,354 on June 8th and collapsed thereafter. By the end of June, the index had dropped 16% from its peak. The index hit its lowest point of the year of 3,026 on August 26th, down 44% from the peak in June. The index ended the year at 3,731, up 2.5% from the beginning of the year, having recovered from its August lows.

US AND CHINESE EQUITY INDICES



Source: Thomson Reuters Eikon

While COMEX silver managed money positions fell into negative territory, physical purchases accelerated considerably in the third quarter. The GFMS coin survey shows that silver bullion coin sales surged 95% in that quarter, the strongest annual rise since the first quarter of 2009 when quarterly sales rose 193% year-on-year. Strong growth could also be implied by the increase in the premia paid for coins over spot, which increased approximately 51% on average between the end of June and the end of September. Coin premia are typically composed of fabrication and sales cost charges. Premia tend to increase in periods of limited supplies and/or excess demand. In the third quarter of the year, much of the increase in premia was a combination of both of these factors.

In the first quarter of 2016, silver investment demand continued to grow. Investors pivoted towards safe haven assets in the first quarter amid renewed worries about emerging economy growth, particularly China. Silver prices rose 15.2% from the beginning of the year to a recent high of $16.13/oz on April 14th. This rise was supported by much more favorable managed money speculative length and renewed buying among ETP investors. Managed money net long positions in COMEX futures and options rose to a recent high of 262.0 Moz (8,051 t) at the end of March, which was up from a previous low of 8.2 Moz (254 t) in the second half of December. ETP holdings rose by 22.1 Moz (689 t) in the first three months of this year and totaled 640.0 Moz (19,905 t) by the end of the quarter. This was the highest quarter-end level since the third quarter of 2014.

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

LONDON BULLION MARKET ASSOCIATION AND COMEX TURNOVER

(daily averages)	LBMA No. of Transfers	Turnover Moz	COMEX Turnover Moz	LBMA/ COMEX Ratio
2009	340	97.3	159	0.6:1
2010	381	87.3	254	0.3:1
2011	798	173.7	389	0.4:1
2012	811	134.5	264	0.5:1
2013	872	136.5	287	0.5:1
2014	778	144.4	272	0.5:1
2015	681	145.9	267	0.5:1

Source: LBMA; COMEX

and open interest, we 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 Association (LBMA) provide a gauge, these data are, by definition, an imperfect reflection of investor activity. First, they do not capture the trends in other OTC markets and secondly, they do not differentiate between pure investment flows and other forms of activity, because they also capture other physical market movements. We therefore also use information collected through field research, which, in 2015, suggested that the OTC market experienced modest buying from investors on a net basis.

This result may come as something of a surprise to some given the significant price drop last year, but this proved to be something of a double edged sword for investor activity. On the one hand, it discouraged some investors who were worried about the level of industrial usage as the Chinese economy slowed, but at the same time it sparked others into bargain hunting as silver hit multi-year lows. In particular, these lower prices encouraged those who did invest to buy a greater quantity of silver as the same dollar expenditure would lead to higher volumes being bought. This change was highlighted by LBMA data, which suggested that the average size of transfers increased by 15%, to the highest annual average since the investor frenzy of 2011. Indeed this trend appears to be continuing into 2016, as data for January and February shows that the average size has risen a further five percent, which is the strongest start to a year since 2010.

This increase in the average level of investor activity overstates the overall level of OTC activity last year, which was up but much more modestly. LBMA clearing statistics show the number of transfers dropped to their lowest level since the post financial crisis level of 2010. The volume of transfers was up by 1% year-on-year, while the price decline meant that the value decline dropped by almost 17%. One key factor underpinning interest was Asian buying but it should be noted that this area of the market, while growing, is more limited than that region's share of overall demand.

EXCHANGE TRADED PRODUCTS

Total holdings of silver exchange traded products (ETPs) declined 3%, or 17.7 Moz (549 t), from year-end 2014, closing the year at 617.8 Moz (19,183 t). In value terms, total holdings declined to $8.5 Bn, a fall of 15% year-on-year. The fall in the value of these products was slightly greater than the decline in the silver price, which dropped by $2.15/oz, or 14% to just below $14/oz at the end of 2015.

For silver ETPs, the biggest outflow over the year took place in the established entities. iShare Silver Trust, the largest silver ETP accounting for half of holdings, recorded a drop of 10.7 Moz (332 t). The second largest loss was seen in ZKB, which registered outflows of 8.0 Moz (249 t), dropping by more than 10% year-on-year. In contrast, ETF Securities (LSE) ended the year at 41.2 Moz (1,281t), reporting a rise of 4.6 Moz (143 t) or 12% increase year-on-year, which was the only major silver ETP that posted an annual gain.

In 2015, silver ETPs saw only three months that registered inflows: 6.4 Moz (199 t) in February, 7.7 Moz (239 t) in June and 1.1 Moz (34 t) in July. In the first half of 2015, the strong inflows in February and June offset most of the outflows in other months. In the second half, the period when the silver market was largely influenced by the likelihood of U.S. interest rate increases, holdings of silver ETPs dropped by 17.1 Moz (532 t), making up approximately 97% of the total outflows over the year. However, the 3% drop during the second half of 2015 compared to a 8% decrease in total gold holdings over the same time frame, owing to differing investor demographics (gold is dominated by institutional investors while silver is typically driven by more retail activity) and being less sensitive to the U.S. economic performance than gold. Furthermore, strong physical demand in the United States, Australia and India last year, though failing to reverse the downtrend of silver prices, likely alleviated some of the downward pressure on silver ETPs. The U.S. Mint exhausted its remaining inventory of the 2015 American Eagle silver coins in the middle of December with 47 million coins sold for 2015, 7% higher than the previous year. India, the biggest buyer of silver,

INVESTMENT IN COMMODITIES

Last year was a disastrous one for commodities as an asset class. Of the 18 commodities we track most closely, every single one of them was in the red when it comes to year-to-date price returns. This is a mirror image of the "supercycle" boom of 2010, when almost every commodity in the basket saw gains across the year.

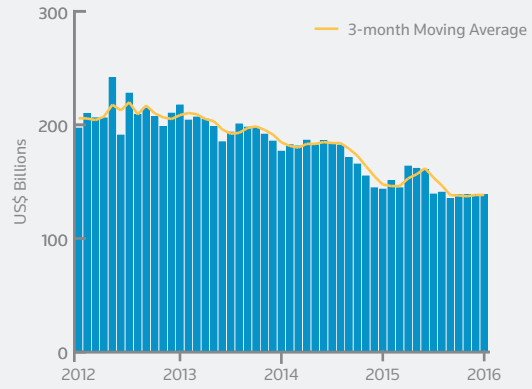
U.S. Government bonds came in as the top performer despite the year-long wait for the first interest rate rise in almost a decade. Weak inflationary pressures, as a result of a strong dollar and plunging commodity prices globally were key drivers behind this year's bond rally, and the Fed's affirmation of gradual normalization limited losses in long-term Treasuries. The dollar index also performed strongly across the year, fueled by rhetoric around interest rate hikes.

In contrast, all key commodities in the metals, energy and agriculture complex suffered losses over 2015, with the magnitude of average year-to-date losses (-23.8%) almost four times that of average gains (+6.6%). In a year characterized by anticipation of the Fed's first interest rate rise and diverging monetary policies between the U.S. Fed and other key Central Banks, the U.S. dollar index has in the past two years experienced the strongest rate of appreciation in a decade. Fears of capital outflows from emerging countries further exacerbated the weakening of emerging market currencies, many of which were key commodity producers such as South Africa, Indonesia and South American countries. Alongside plunging energy prices and the reining in of costs amongst miners, this resulted in cost curve deflation. In some commodity markets characterized by supply overhangs such as iron ore, nickel and aluminium, production cuts were not meaningful enough to create a price impact either. Combining this with waning appetite for commodities from China, the world's largest commodity consumer, these factors did not bode well for commodities as an asset class and prices languished as a result.

Grouping these individual commodities by similar categories on an equally weighted basis, energy was the worst performing commodity sector in 2015, shedding 31% over the year, after what seemed to be a promising start. This was followed by metals, which fell by 25% on average, dragged down by lackluster economic activity in China and the anticipation of the U.S. rate rise. Speculative sentiment, as measured by net managed money positions reported by the CFTC, was visibly bearish in 2015 for crude oil, natural gas and PGMs. Managed gold positions also saw the first net short position since CFTC began to introduce managed money as a specification in 2006. These bearish positions definitely lent downward pressure to prices during the second half of the year. Amid increased uncertainty in China and emerging markets economic outlook, average price volatility was also much higher compared to 2014, especially in the energy complex.

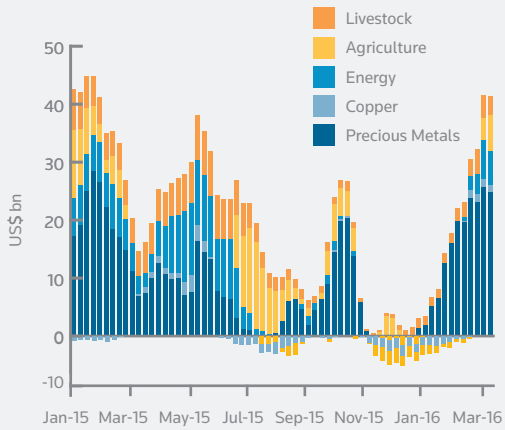
The weak price performance across all commodities inevitably led to a decline in key commodity indices and funds. According to Lipper, an estimated total of US$1.85 bn of fund outflows occurred in general commodity funds in 2015 in the United States alone, and a further US$123 mn of outflows took place in precious metals equity funds. That said, they estimate a small net inflow of US$40 mn entering energy related funds last year. The production-weighted, energy heavy, S&P GSCI Index fell by 24.6% in 2015, while the liquidity-driven Bloomberg Commodity Index fell by 25.7% over the same period. Meanwhile, the Thomson Reuters CRB Index fell by

CFTC INDEX INVESTMENT DATA (US$BN)



Source: GFMS, Thomson Reuters

NET POSITIONS IN KEY COMMODITY FUTURES

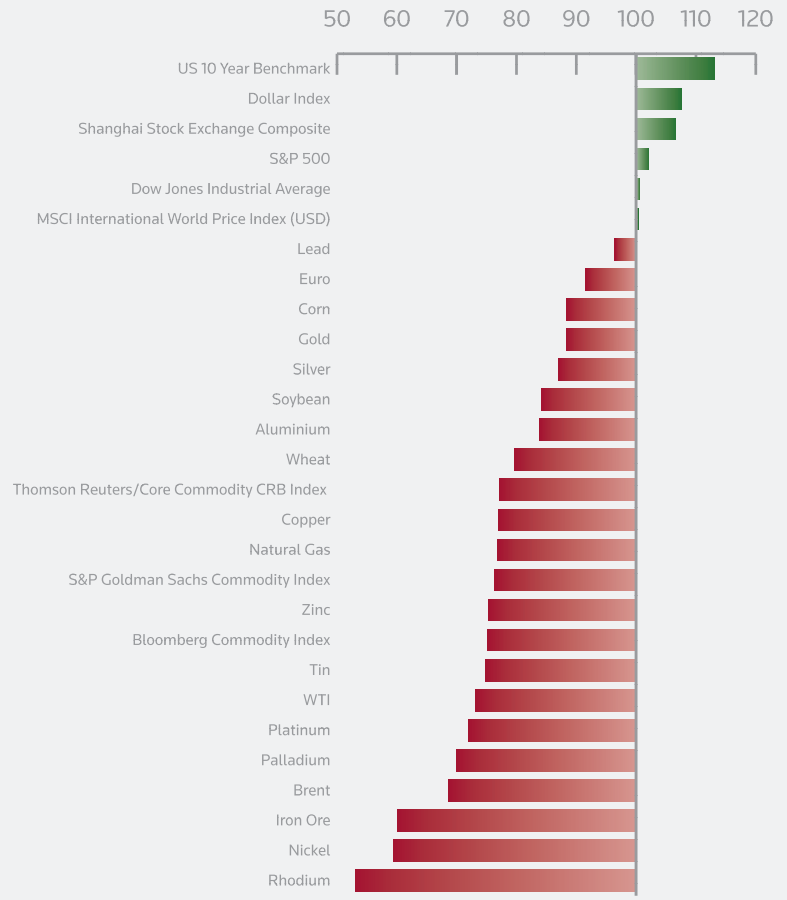


Source: CTFC

24.2%. This would undoubtedly affect the performance of the many ETPs tracking against these benchmarks. As part of GSCI S&P annual rebalancing exercise for 2016, the Investment Support Level, a reflection of the general level of investment in the S&P GSCI and related commodity indices that can be supported by liquidity in the relevant contracts, was reduced from US$220 bn to US$180 bn – a sign of waning appetite for commodities amongst investors.

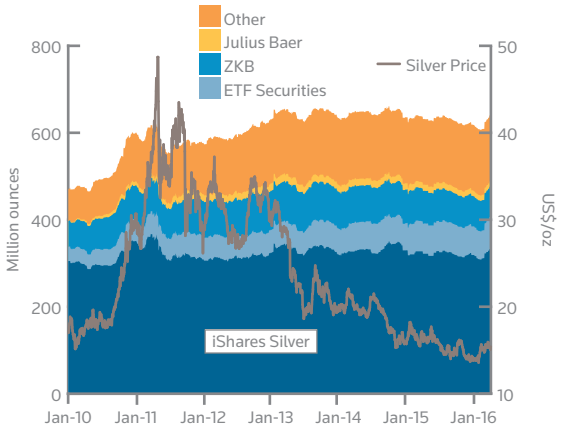
Looking to 2016, in the first six weeks of the year, volatile financial markets and heightened concerns over global economic growth in light of expansionary monetary policies, realization that the pace of U.S. interest rate rises will slow, in addition to a weakening U.S. dollar, supported safe haven assets such as gold, while industrial metals and the general wider commodity complex fell. However, with equity markets recovering from mid-February, the commodity complex was showing signs of recovery. From the start of the year up until writing, precious metals and base metals are the best performing assets while the dollar index, energy and equities are lower year-to-date.

INDEXED PERFORMANCE ACROSS ASSETS IN 2015 (JANUARY 5 2015 = 100)



Source: GFMS, Thomson Reuters

SILVER ETP HOLDINGS



Source: Respective Issuers
*ETF Securities: includes LSE, Australia, NYSE, GLTR and WITE
**Other: includes Sprott Physical Silver Trust, Julius Bär, DB Physical Silver, BlackRock Silver Bullion Trust, Silver Bullion Trust, Mitsubishi UFJ Tokyo, iShares Physical Silver ETC, Source Physical Silver, Royal Canadian Mint;

SILVER ETP HOLDINGS

		(Moz)
	end-2014	**end-2015**
iShares Silver Trust	329.6	318.9
Central Fund of Canada	77.0	77.0
ZKB Silver ETF	77.1	69.1
ETF Securities*	62.5	65.9
Others**	89.4	87.0
Total	**635.5**	**617.8**

* Includes LSE, Australia, NYSE, GLTR, WITE and Hong Kong

** Includes Sprott Physical Silver Trust, Julius Bär, DB Physical Silver, BlackRock Silver Bullion Trust, Silver Bullion Trust, Mitsubishi UFJ Tokyo, iShares Physical Silver ETC, Source Physical Silver, Royal Canadian Mint.

Source: Respective issuers

also saw a record-breaking 2015, with 256.0 Moz (7,954 t) of silver imported for the full year.

In general, silver ETP investors, both institutional and retail who want exposure to precious metals, are not as price-sensitive as those in the futures or physical markets. Therefore, the liquidation in silver holdings is not necessarily highly correlated with the spot price, but mostly a reflection of medium-term prospects. In 2015, while the silver price experienced four major rises in January, March, May and October, silver holdings saw inflows during February, April, June and November, often following a price correction or clear oversold signals. However, during the third quarter of 2015, ETP holdings showed a much stronger correlation with spot prices, mostly due to the expectation of a U.S. interest rate rise later in the year. The hawkish stance that the Federal Open Market Committee (FOMC) delivered in the third quarter, not only had an impact on spot prices, but also added pessimistic sentiment to the market in terms of medium-term strategies.

Turning to 2016, silver ETP holdings surged by 31.0 Moz (966 t) in March (this represented an increase of US$861 mn in value terms), to total 639.0 Moz (19,871 t) at the end of the month. Mario Draghi, the ECB President, indicated that he did not expect to push rates deeper into negative territory on March 11th. His comments on rates triggered a surge in the euro and a consequent fall in the dollar, pushing the silver price higher in dollar terms. After the following week, the FOMC scaled down its estimates for the number of hikes in policy rates to two from the four previously touted, which also boosted investor sentiment toward silver.

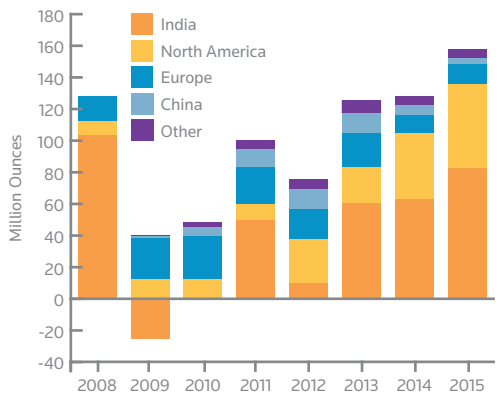
PHYSICAL BAR INVESTMENT

Global physical bar investment rose to a record 158.2 Moz (4,920 t) in 2015, a 24% surge from the previous year. The declining silver price drove bargain buying higher, particularly in India and the United States, where bar consumption rose 31% and 25%, respectively. Strong demand for official coins and corresponding shortfalls of coin supply also boosted bar demand, as investors sought an alternative to satiate investment demand.

Indian physical bar investment increased by 31% to 82.5 Moz (2,567 t), the highest since 2008. In India, a large part of physical bar investment comes from short term hoarding to benefit from lower prices or to profit from a differential in the spot and futures market. This short term build up of positions eventually returns to the market as disinvestment when the price rallies. Such disinvestment during price rallies results in local premia (the price at which the metal is sold by a domestic trader after buying from importing agency) falling to a low of 2 cents and at times being forced to sell at discount, as against a lower threshold of 3 cents observed in 2014. At the retail level investors preferred to accumulate one and five kilogramme bars in quantities higher than 2014, but these would come back for fabricating into silverware or jewelry.

Physical bar investment in the **United States** was revised to include demand for an investment product, previously not being captured in our estimates, called "rounds". Growth in demand for silver rounds has been tremendous in recent years for two reasons: a large portion of these rounds are produced at minting operations attached to COMEX approved refiners, which enhances their liquidity value, and new minting operations were commissioned, expanding minting capacity in the market where demand had been chronically exceeding supply. Demand for silver rounds is somewhat new to the market in terms of its magnitude and level of liquidity. As a result, physical bar demand in the United States for 2014 has been revised upward by 30.5 Moz (948 t), to a total of 41.3 Moz (1,285 t). Demand rose to 51.8 Moz (1,611 t) in 2015, a 25% increase over the previous year. Much of the growth was caused by a shortage of American Eagle and Maple Leaf coins. Insatiable demand for these coins spilled over into lower premia silver bullion products such as bars and rounds.

PHYSICAL BAR INVESTMENT



Source: GFMS, Thomson Reuters

Physical bar investment in **Europe** rose by 16% to 12.7 Moz (396 t) last year driven by robust uptake in various countries. This is a welcome development following the prolonged downtrend since the peak in 2010. The improvement can be attributed to the generally more upbeat sentiment toward the precious metals complex. Tax free gold physical bar investment is often the first choice among European investors. However, some investors have been attracted by silver's price correction in recent years, allocating a portion of their portfolio towards it. Purchases of such kind are usually for the buy and hold strategies by investors able to stomach strong volatility. Silver remains heavily taxed by the majority of countries in Europe, barring Turkey, although there are some exemptions under the so called "differenzbesteuerung" for material sourced outside the EU and for resale purposes in Germany. It makes investing in silver, however, a little bit more complex, which contributes to some investors shying away. Nevertheless, the improved sentiment last year proved that the prospects for silver physical bar investment are still very good, particularly when macro economic uncertainties resurface.

Following a drop of 52% a year earlier, **Chinese** bar investment fell to 3.8 Moz (118 t) in 2015, down 38% year-on-year and the lowest since 2010. The sharp decline was partly attributed to market consensus that the silver price was on a downward trend. Furthermore, silver was seen as a less attractive asset compared to gold, which traditionally Chinese investors prioritize for physical exposure to precious metals. The Chinese economic slowdown also took a toll on silver physical investment, as demand for precious metals across the sector remained weak. However, while investment demand remained sluggish for the full year, an increasing number of domestic investors resumed their interest in silver for collections. The second half of 2015 saw stellar growth in demand for silver coins, especially those of a commemorative nature, which pushed demand 80% higher than that of 2014 to 10.7 Moz (331 t).

COMMODITY EXCHANGES ACTIVITY

The year of 2015 saw total turnover on the **Shanghai Futures Exchange** (SHFE) drop by 25 % after three years of stable growth, to a nominal 70,176 Moz (2,182,677 t). The exchange saw high turnover in the first quarter, sustaining the growth seen in the second half of 2014. However, activity fell to its lowest on record in the final quarter of 2015, with an average daily turnover of 151.4 Moz (4,710 t), reflecting poor sentiment and the bankruptcy of some industry members due to weak demand.

SILVER TURNOVER ON MAJOR COMMODITY EXCHANGES

(total volume in nominal million ounce equivalents)

	2013	2014	2015	Change y-o-y
SHFE	82,971	93,296	70,176	-25%
COMEX	72,375	69,485	67,272	-2%
MCX	15,676	7,750	7,705	-1%
SGE	6,881	8,024	12,935	61%
ICE FUTURES US	500	188	135	-29%
TOCOM	31	28	20	-27%

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

Source: GFMS, Thomson Reuters; TOCOM, MCX, SGE and SHFE

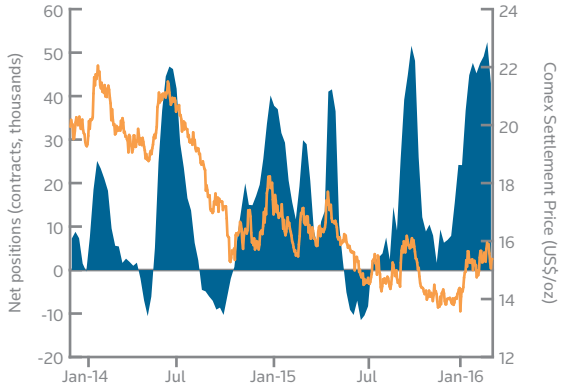
On the contrary, **Shanghai Gold Exchange** (SGE) continued its stellar growth, with volumes increasing by 61 % year-on-year to a nominal 12,935 Moz (402,320 t). Interestingly, although total volumes were significantly lower compared with other major commodity exchanges, SGE was the only exchange to post growth in 2015. Record activity was registered in August, with total turnover for the month at 1,653 Moz (51,401 t). This was a reflection of the much more volatile path that the silver price took over that period. Additionally, an adjustment in the deferred interest rate of the Ag (T+D) contract from 0.020% to 0.018%, which was implemented by the exchange in November last year, attracted more investors and bigger trading volumes.

Turnover on the **Multi Commodity Exchange of India** (MCX) more than halved in 2014 as a result of the commodities transaction tax, which was introduced in July 2013. The marginal 1 % year-on-year decrease in 2015, to a nominal 7,705 Moz (239,648 t), might indicate that investors have gradually adjusted to the change.

Turnover on **COMEX** posted a modest 2% year-on-year decline last year, to a nominal 67,272 Moz (2,092,362 t). While the turnover surged in August to its maximum for the year, largely driven by increased price volatility, activity slowed in September, with the daily average of 195.8 Moz (6,090 t), before growing afterwards in the anticipation of the FOMC decision on rate cut.

CFTC reports on managed money positions can be used as a proxy for investor activity on the exchange. The first half of 2015 was characterized by a steady rise in long positions

NET MONEY MANAGER POSITIONS ON COMEX



Source: CFTC

and a volatile short position, mirroring the silver price. At the end of June investors turned negative, leaving a net deficit of 25.5 Moz (792 t). A continuously falling price was accompanied, and partially driven by, a surge in shorts to a record high of 287 Moz (8,931 t) in July and supported the sell-off trend until mid-August, when the price first rallied and then dropped again. For most of the fourth quarter, investors favored the metal largely for its industrial properties, supported by positive news on U.S. economic recovery, thereby bringing long positions to a record high in October to a nominal 310 Moz (9,642 t).

ICE Futures U.S. and **TOCOM** posted year-on-year declines in turnover by 28% and 27% respectively. Volumes dropped significantly on both exchanges towards year-end. Subdued trading activity across all major exchanges (with the exception of the SGE) is reflective of a generally negative sentiment towards silver and other commodities in light of the slowdown in China.

COINS AND MEDALS

Silver coin fabrication rebounded in 2015, rising by 24%, following an 8% decline in 2014, to bring total coins and medals fabrication to 134.1 Moz (4,172 t), the highest level on record. Last year exceeded our previous record high in 2013 of 117.0 Moz (3,635 t), when investors entered the market en masse to bargain hunt following the silver price collapse in Q2 2013. Prior to that period, high prices had priced many potential investors out of the market, or to lower volumes. In value terms, total investment in coins and medals declined by 3% to $1.6 Bn, as the growth in volumes was more than offset by declines in the silver price.

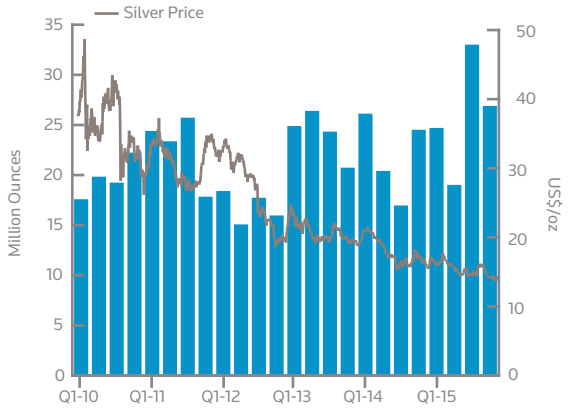
MANAGED MONEY NET POSITIONS IN COMEX FUTURES

		Contracts	Moz	Price
2012		19,345	96.7	31.15
2013		9,444	47.2	23.79
2014		9,613	48.1	19.08
2015	Q1	26,052	130.3	16.71
	Q2	18,865	94.3	16.39
	Q3	1,687	8.4	14.91
	Q4	22,650	113.3	14.77

(Managed Money net positions, Moz equivalent and average COMEX settlement price in $/oz)
Source: CFTC

GFMS' proprietary quarterly bullion coin survey shows that silver coin sales started 2015 by holding firm from levels recorded at the end of 2014, before the introduction of European VAT increases in the second quarter of 2015 resulted in a swift contraction in sales. However, sales rebounded in the third quarter, soaring by an impressive 74% on a quarter-on-quarter basis and 95% on a year-on-year basis to 32.9 Moz (1,023 t), the highest quarterly sales in our nine years' worth of records, as prices fell below the key psychological level of $15/oz. Unlike gold bullion coin sales, which ebbed and flowed with the gold price, quarterly sales of silver bullion coins have remained solid since 2010. Therefore, the upward lurch in this quarter was remarkable considering the comparatively narrow range of silver price swings. The sales of silver coins were so strong that almost all the key mints had to put their silver bullion sales on allocation, with many bullion dealers indicating that lead times, which are typically immediate delivery, were stretched to 3-4 weeks. In the final quarter of the year, demand remained strong, with low silver prices, volatile financial markets and general uncertainty over the

SILVER BULLION COIN SALES



Source: GFMS, Thomson Reuters

TABLE 2 - SILVER FABRICATION: COINS AND MEDALS (INCLUDING THE USE OF SCRAP)

(million ounces)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
United States	17.6	16.0	25.4	34.3	41.7	41.0	34.8	44.2	45.5	48.6
Canada	2.9	4.3	9.0	10.8	18.6	23.5	18.0	29.7	30.7	35.8
Australia	1.4	3.5	5.9	6.5	8.8	11.3	6.5	9.1	7.9	12.3
China	1.6	2.6	2.8	3.0	1.5	4.1	4.5	6.2	5.9	10.7
India	0.0	0.0	0.0	0.0	0.0	1.9	1.9	5.4	6.3	8.9
Austria	0.5	0.5	8.3	9.5	11.6	18.4	9.2	14.7	4.8	7.5
United Kingdom	0.4	0.5	0.5	0.5	0.5	1.0	0.7	2.2	1.9	3.2
Germany	8.7	6.3	7.2	7.4	6.4	3.3	1.1	0.6	0.6	2.0
Mexico	1.9	1.6	1.4	1.7	2.1	1.7	0.7	1.1	1.0	1.0
Spain	1.5	1.2	0.6	0.6	0.6	0.5	0.4	0.4	0.5	0.5
Other Countries	3.2	3.0	3.0	3.2	4.2	3.9	7.2	3.2	2.9	3.7
World Total	**39.7**	**39.5**	**64.1**	**77.6**	**95.9**	**110.4**	**85.1**	**116.9**	**108.0**	**134.1**

global economic outlook resulting in the second strongest quarterly sales in our recorded history.

Looking at trends on a regional basis and starting with North America, silver fabrication in the United States and Canada sharply increased from the previous year's levels, growing 7% and 17% respectively, with combined bullion and numismatic coins recording 48.6 Moz (1,513 t) and 35.8 Moz (1,112 t) in 2015. In both countries, this was the highest silver coin fabrication level in our records. Mexico saw silver coin sales remain flat at 1.0 Moz (31 t).

European coin fabrication rebounded in 2015, increasing by 67% year-on-year to 15.2 Moz. Half of this growth is attributed to Austria, Europe's pre-eminent bullion coin manufacturer, which saw total sales rise by 56% to 7.5 Moz (233 t), its highest level since 2013. Meanwhile, the UK, the second largest market for bullion coins in Europe, saw a rise in sales of 62% to 3.2 Moz (98 t), marking the highest annual UK sales on record. The rejuvenation in demand, which prior to 2013 was always below 1.0 Moz, was largely driven by weakness in silver prices in the second half of the year; it was also partly a result of the Royal Mint's marketing campaign to revive demand for precious metals, which began three years ago. Meanwhile, Germany, once (but no longer) Europe's second largest silver coin fabricator, saw its silver uptake soar in 2015 by 213% to 2.0 Moz (63 t), to its highest ever recorded level.

In Asia, silver coin fabrication soared by 54% in 2015 to 21.1 Moz (657 t), far more than reversing the 4% decline recorded in the previous year and marking the highest annual Asian fabrication level in our records. Much of this growth was driven by an impressive 80% increase in Chinese silver coin fabrication, which by year-end totaled 10.7 Moz (331 t). Silver coin fabrication has increased by more than sixfold in China in the past decade, growing from a mere 1.6 Moz (50 t) in 2006. This has been driven by an increase in interest for bullion coins as a means to store wealth, with silver seen as an alternative way of getting exposure to gold as it is trades at a lower and more volatile price and offers a good entry point for smaller investors. Meanwhile, efforts by China Gold Coin, in promotional activities, widening distribution channels, in addition to further diversifying silver coin designs in both traditional and modern patterns, has attracted further interest for silver coins for collection purposes.

Similarly, Australia, which is one of the of the key silver bullion coin producers in the world, rebounded last year, growing 57% to total 12.3 Moz (384 t), to record its highest fabrication level on record. India resumed its position as Asia's second largest silver coin fabricator in 2015, producing 8.9 Moz (278 t). The 43% year-on-year growth was attributed to increased demand from the gifting segment, for both corporate and personal gifting, while investors hoarded the coins, expecting higher prices.

Entering 2016, volatile financial markets and a general sense of uncertainty resulted in risk averse investors looking to park their assets in safe havens, with North America and Australia in particular recording exceptionally strong silver coins sales in January and February. However, by end-March, with the silver price having rallied by 11% from its recent low, in addition to recovering European equity markets, demand across Europe faltered, recording first quarter declines of 79% and 27% year-on-year in the UK and Austria respectively.

4. MINE SUPPLY

- **Global silver mine production increased by 2% in 2015, reaching a total of 886.7 Moz (27,579 t).**
- **The copper sector was the principal driver behind the increase, with a 7% year-on-year increase in output.**
- **Regionally, the strongest gains were in South America and Europe, with increases of 5% and 8% respectively.**
- **Primary silver co-product cash costs plus capex fell by 11% in 2015, to average $11.74/oz.**
- **The producer community added silver hedges in 2015 of 7.8 Moz (244 t) in 2015, to leave the hedge book at end-December amounting to 38.9 Moz (1,213 t).**

MINE PRODUCTION

- ***Silver mine supply increased once again in 2015, led by gains in South America and Europe, with by-product silver from the copper sector seeing the largest year-on-year gain.***

Global silver mine supply increased for the 13th successive year in 2015, reaching a record high of 886.7 Moz (27,579 t), a 2% year-on-year increase and representing a stronger outcome than forecast six months ago. Regionally, the largest increase was recorded in South America, where supply grew by 5%, or 14.4 Moz (447 t). Standout gains in the regions were seen from Peru's Antamina and in Argentina from Cerro Negro. European mine supply gained a substantial 8%, or 9.1 Moz (284 t), with additional primary silver supply from Dukat, and higher by-product output from Boliden and KGHM's base metals operations. In terms of production sectors, the largest increase in both volume

TOP 20 SILVER PRODUCING COUNTRIES

Rank			Output (Moz)	
2014	2015	Country	2014	2015
1	1	Mexico	186.3	189.5
2	2	Peru	122.9	135.9
3	3	China	112.5	109.1
6	4	Russia	46.1	50.5
4	5	Australia	53.9	50.3
5	6	Chile	50.6	48.4
7	7	Bolivia	43.2	42.0
8	8	Poland	40.7	41.5
9	9	United States	37.9	35.4
10	10	Argentina	29.1	34.7
11	11	Guatemala	27.6	27.7
12	12	Kazakhstan	19.0	17.3
14	13	Sweden	12.7	15.9
13	14	Canada	15.9	12.2
16	15	India	8.4	12.0
17	16	Indonesia	7.7	9.8
15	17	Morocco	8.8	9.5
18	18	Turkey	6.6	6.5
19	19	Dominican Republic	4.5	4.1
20	20	Armenia	3.7	3.7
		Rest of World	**30.2**	**30.6**
		World Total	**868.3**	**886.7**

Source: GFMS, Thomson Reuters

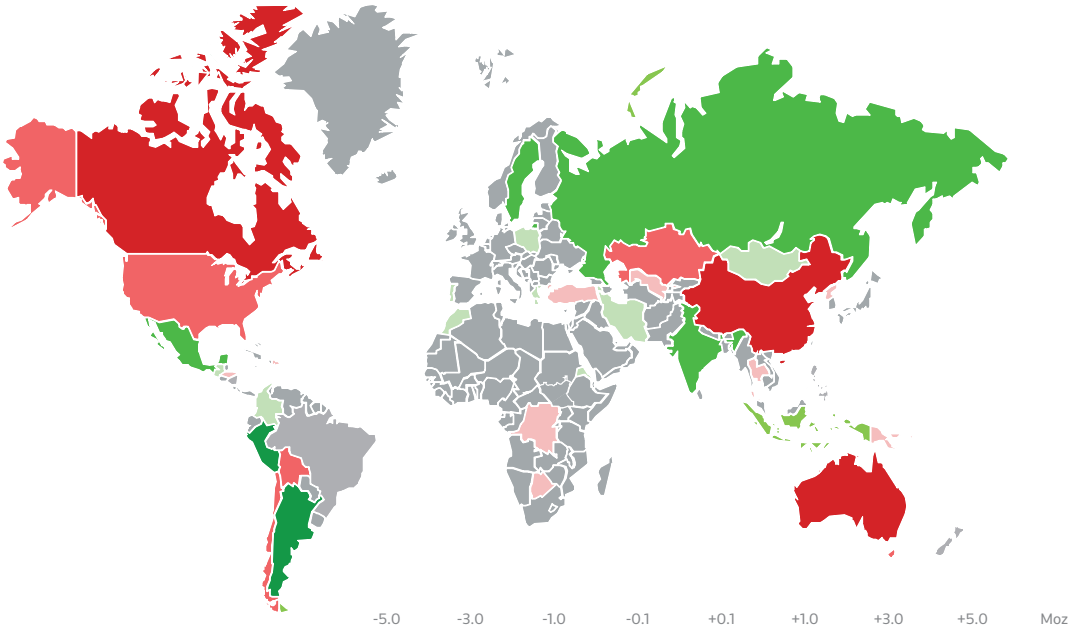
TOP 20 SILVER PRODUCING COMPANIES

Rank			Output (Moz)	
2014	2015		2014	2015
2	1	Fresnillo plc. [1 2]	40.4	43.0
1	2	KGHM Polska Miedź S.A. Group [3]	40.4	41.6
3	3	Goldcorp Inc.	36.8	40.4
4	4	Glencore plc. [4]	35.5	36.6
6	5	Polymetal International plc.	28.7	32.1
7	6	Pan American Silver Corp. [2]	26.1	26.1
8	7	Volcan Cia. Minera S.A.A. [4]	22.5	24.8
11	8	Cia. De Minas Buenaventura S.A.A. [4]	19.7	22.3
9	9	Corp. Nacional del Cobre de Chile	20.4	21.3
10	10	Tahoe Resources Inc. [2 5]	20.3	20.4
5	11	BHP Billiton plc. [5 6]	34.0	19.2
12	12	Coeur Mining, Inc. [2]	17.2	15.9
14	13	Sumitomo Corp. [5]	14.2	15.8
13	14	Hochschild Mining plc. [7]	16.2	14.8
NA	15	South 32 Ltd. [5]	NA	13.9
20	16	Boliden A.B. [6]	10.4	13.5
16	17	Southern Copper Corp. [8]	13.0	13.3
23	18	Hindustan Zinc Ltd. [9]	8.4	12.0
19	19	Hecla Mining Company	11.1	11.6
15	20	Industrias Peñoles S.A.B. De C.V. [10]	14.1	11.5

1 Including 100% of Penmont mines, excluding silverstream; 2 Primary silver producer;
3 Reported metallic silver production; 4 Includes minority partners; 5 Estimate; 6 Metal in concentrate;
7 Includes 100% from Pallancata, includes Moris; 8 Mined silver; 9 Integrated refined metal;
9 Excludes 100% of Fresnillo plc.

Source: GFMS, Thomson Reuters

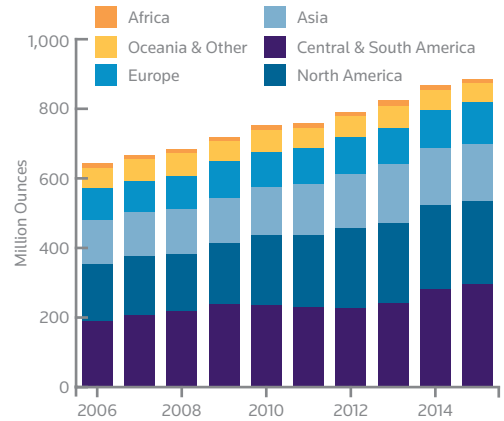
SILVER MINE PRODUCTION WINNERS AND LOSERS, 2015 VERSUS 2014



Source: GFMS, Thomson Reuters

and percentage terms came from copper mines, which produced an additional 12.5 Moz (388 t) of by-product silver in 2015, a 7% increase on the previous year. The primary silver and gold sectors each gained 5% last year, equivalent to annual increases of 11.7 Moz (364 t) and 6.2 Moz (192 t) respectively. These gains were offset somewhat by losses from the lead-zinc mining industry, where the effects of announced supply cutbacks are beginning to manifest themselves. Production costs for silver producers fell again in 2015. On a co-product basis, the average cash cost plus capex decreased by 11%, to $11.74/oz. By comparison, the Total Cash Cost on a by-product basis averaged $6.66/oz in 2015, a 3% year-on-year decrease. The silver producer hedge book expanded by 7.8 Moz (244 t) in 2015, ending the year at a delta-adjusted total of 38.9 Moz (1,213 t).

WORLD SILVER MINE PRODUCTION



Source: GFMS, Thomson Reuters

NORTH AMERICA

North American mine production fell for the first time in seven years, dropping by 3 Moz (93 t) to total 237 Moz (7,374 t). This outcome was driven by a drop in the lead/zinc sector in Mexico and Canada, partially offset by an overall increase in production from primary silver mines.

Mine supply from **Mexico** rose by 3.2 Moz (100 t), or 2%, led by the primary silver and the gold sector. Higher production at Saucito accounted for the majority of the growth in the country, supported by the ramp-up at Saucito II, ahead of schedule. El Cubo reaped the benefit of an expanded mining fleet to raise plant throughput by 64%, accompanied by higher grades due to planned mine sequencing, yielding a 1.1 Moz (33 t) increase in output. Further gains were recorded at Parral and Avino, where aggregate output rose by 1.3 Moz (41 t) on higher throughput from the commissioning of Mill Circuit 3, and ramp-up efforts, respectively. Following the expansion at San Jose in April 2014, throughput continued to rise, registering a 12% increase year-on-year, adding 0.5 Moz (17 t) over the year as a whole.

Providing a partial offset, development delays at Fresnillo led to fewer tons of ore hoisted and caused throughput rate to fall by 8.2%. Altogether, grades fell by 15%, causing a 4.5 Moz (140 t) drop in output. In addition, a 5% decrease

TABLE 3 - WORLD SILVER MINE PRODUCTION

(million ounces)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Europe										
Russia	31.3	29.3	36.4	42.2	36.8	38.5	44.5	45.9	46.1	50.5
Poland	40.5	39.6	39.0	39.2	37.6	40.8	41.3	37.6	40.7	41.5
Sweden	8.6	9.4	8.4	8.7	9.2	9.1	9.8	10.8	12.7	15.9
Turkey	6.0	7.5	10.1	12.5	12.3	9.3	7.3	6.0	6.6	6.5
Portugal	0.6	0.9	1.3	0.7	0.7	1.0	1.1	1.4	1.7	2.4
Spain	0.1	0.1	0.1	0.1	0.7	1.1	1.2	1.3	1.3	1.3
Greece	0.8	1.1	1.1	0.9	0.9	0.8	1.0	0.9	0.9	1.0
Bulgaria	0.6	0.4	0.4	0.5	0.4	0.5	0.6	0.6	0.6	0.6
Macedonia	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
Ireland	0.2	0.2	0.3	0.2	0.1	0.2	0.3	0.3	0.2	0.2
Romania	0.5	0.1	0.0	0.1	0.2	0.4	0.3	0.3	0.1	0.1
Finland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
Other Countries	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Europe	**89.6**	**89.0**	**97.4**	**105.5**	**99.4**	**102.0**	**107.7**	**105.7**	**111.3**	**120.4**
North America										
Mexico	95.5	100.8	104.1	114.3	141.8	153.6	172.3	177.3	186.3	189.5
United States	36.7	40.5	36.0	40.2	41.2	36.0	34.1	33.4	37.9	35.4
Canada	31.2	26.7	21.5	19.6	18.4	18.7	22.0	20.6	15.9	12.2
Total North America	**163.3**	**168.0**	**161.6**	**174.0**	**201.4**	**208.3**	**228.4**	**231.3**	**240.1**	**237.1**
Central & South America										
Peru	111.6	113.8	120.2	127.7	118.7	111.7	114.0	120.7	122.9	135.9
Chile	51.7	62.3	45.2	41.8	41.4	41.5	38.4	37.7	50.6	48.4
Bolivia	15.2	16.9	35.8	42.6	40.5	39.0	38.8	41.2	43.2	42.0
Argentina	6.9	8.2	10.8	18.0	23.3	22.8	24.5	24.9	29.1	34.7
Guatemala	1.6	2.8	3.2	4.2	6.3	8.8	6.6	9.0	27.6	27.7
Dominican Republic	0.0	0.0	0.0	0.6	0.6	0.6	0.9	2.8	4.5	4.1
Honduras	1.8	1.7	1.9	1.9	1.9	1.6	1.6	1.6	1.8	1.1
Nicaragua	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6
Ecuador	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6
Brazil	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5
Colombia	0.3	0.3	0.3	0.3	0.5	0.8	0.6	0.4	0.4	0.5
Venezuela	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Other Countries	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1
Total C. & S. America	**190.0**	**207.1**	**218.5**	**238.2**	**234.4**	**228.0**	**226.9**	**240.1**	**281.9**	**296.3**
Asia										
China	75.9	79.3	84.0	86.7	94.6	102.6	109.3	113.5	112.5	109.1
Kazakhstan	25.6	22.8	20.2	19.7	17.6	17.6	17.5	19.6	19.0	17.3
India	5.9	5.7	6.8	6.2	8.2	7.5	9.0	10.7	8.4	12.0
Indonesia	7.9	8.6	8.0	7.7	6.7	6.1	5.3	8.2	7.7	9.8
Armenia	1.3	1.7	1.4	1.3	1.6	2.4	2.9	3.4	3.7	3.7
Islamic Rep. of Iran	3.2	2.9	3.2	3.4	3.6	3.6	3.5	3.2	3.1	3.3
Mongolia	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.6	2.1	2.6
Uzbekistan	2.1	2.5	1.7	1.7	1.9	1.9	1.9	1.9	1.7	1.5
Dem. Rep. of Laos	0.2	0.1	0.2	0.5	0.6	0.6	0.6	1.0	1.3	1.3
Philippines	0.8	0.9	0.5	1.1	1.4	1.4	1.5	1.5	0.9	0.9
North Korea	0.9	0.9	0.9	0.8	0.8	0.9	0.9	0.9	0.9	0.8
Thailand	0.5	0.4	0.4	0.7	0.7	0.8	1.2	1.2	1.1	0.8
Saudi Arabia	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.6	0.7	0.7

TABLE 3 - WORLD SILVER MINE PRODUCTION

(million ounces)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Japan	1.1	0.4	0.4	0.4	0.3	0.5	0.6	0.5	0.5	0.5
Kyrgyzstan	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.4
Tajikistan	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
Pakistan	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other Countries	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1
Total Asia	**127.2**	**128.2**	**129.7**	**132.2**	**140.2**	**147.9**	**156.2**	**168.4**	**164.1**	**165.1**
Africa										
Morocco	7.7	7.2	8.1	8.7	10.5	8.3	8.3	9.1	8.8	9.5
Eritrea	0.0	0.0	0.0	0.0	0.0	0.1	0.7	0.8	1.5	2.3
South Africa	2.8	2.2	2.4	2.5	2.6	2.4	2.2	2.2	1.2	1.1
Zambia	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5
Burkina Faso	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4
Tanzania	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4
Botswana	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.3	0.3	0.2
Zimbabwe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Ethiopia	0.0	0.0	0.0	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
Ghana	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Dem. Rep. of Congo	2.2	2.3	1.1	0.0	0.2	0.4	0.4	2.0	0.3	0.1
Other Countries	1.1	0.3	0.3	0.0	0.0	0.1	0.1	0.1	0.1	0.0
Total Africa	**15.0**	**13.1**	**12.9**	**12.4**	**14.6**	**12.6**	**13.3**	**15.8**	**13.9**	**14.8**
Oceania & Other										
Australia	55.6	60.4	61.9	52.4	60.4	55.5	55.5	59.2	53.9	50.3
Papua New Guinea	1.6	1.4	1.6	2.2	2.1	3.0	2.6	2.9	2.8	2.3
New Zealand	1.1	0.6	1.0	0.5	0.4	0.3	0.2	0.4	0.3	0.3
Other Countries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Oceania & Other	**58.4**	**62.4**	**64.6**	**55.0**	**63.0**	**58.7**	**58.3**	**62.4**	**57.0**	**52.9**
World Total	**643.4**	**667.7**	**684.7**	**717.3**	**753.0**	**757.6**	**790.8**	**823.7**	**868.3**	**886.7**

in silver grades at Palmarejo led to a 1.4 Moz (44 t) drop in output.

Turning to the gold sector, production at San Dimas increased by 35%, or 2.2 Moz (67 t), as a result of higher throughput and recovered grades from the Jessica vein. Higher ore grades were also posted at Cienega, where production from the San Ramón satellite mine helped add 0.8 Moz (23 t). Silver production fell from the lead/zinc sector as Campo Morado was placed on care & maintenance and development work delays at Cozamin led to a shortfall in production. These losses were partially offset by a marginal increase at Peñasquito on higher grades.

Losses in **Canada** extended for a third consecutive year as output dropped by 3.6 Moz (113 t). The contraction mainly related to lower production from the lead/zinc sector as mining activities ceased at Wolverine early in January 2015, followed by Myra Falls in April 2015. Further losses were seen in the gold and copper sector on lower grades at LaRonde and the shutdown of Duck Pond mid-year.

The **United States** also experienced a reduction in silver output, of 7% year-on-year, to total 35.4 Moz (1,100 t). The largest change year-on-year was registered at Bingham Canyon, where lower grades and reduced throughput due to the de-weighting and de-watering led to a 1.5 Moz (46 t) drop in output. We estimate that production at Teck's Red Dog dropped by approximately 0.5 Moz (17 t). The gold sector posted a loss of 1.9 Moz (60 t) which stemmed from the suspension of operations at Hycroft mid-year. Gains were noted in the primary silver sector with an increase at Greens Creek on higher grades, albeit partially offset by a drop at Lucky Friday due to a failure in the underground ventilation system.

CENTRAL & SOUTH AMERICA

For a third consecutive year, Central & South American mine production was the engine behind global mine supply growth; output rose by 14.4 Moz (447 t) to a record high of 296.3 Moz (9,215 t). Across the region, output growth was led by copper and gold operations, and to a lesser extent, primary silver mines. On an aggregate basis, the copper and gold mines in the region contributed 15.2 Moz (473 t) of additional production, with losses from the lead/zinc sector providing an offset of 2.6 Moz (80 t).

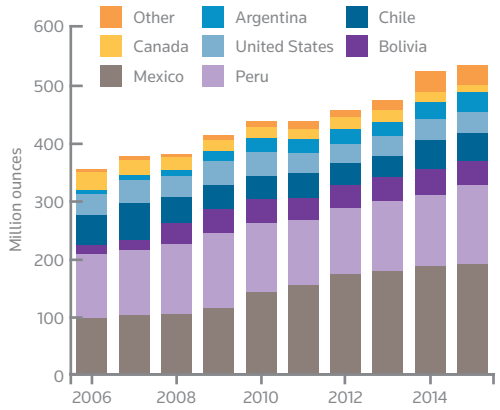
The largest country increase globally was from **Peru**, where production rose by 13.0 Moz (405 t), or 11%, to a total 135.9 Moz (4,227 t). The majority of the increase in output came from the copper sector, which rose by 11.1 Moz (344 t), driven by higher throughput at Antamina and the ramp-up of operations at Toromocho. In addition, fresh supply came from Constancia, which was commissioned in December 2014, and achieved commercial production in April 2015. A full year of operations accounted for an increase of 2.0 Moz (62 t) last year. With the exception of a project addition in the form of Inmaculada, silver production from the gold sector remained relatively steady through 2015. Dóre output at Inmaculada started in June 2015, and reached commercial production three months later, adding 2.1 Moz (64 t) to Peru's 2015 total. Gains from primary silver mines were driven by an increase in output at Uchucchacua and the Oxides Plant at Cerro de Pasco, which was commissioned in Q4 2014 to process silver-rich stockiles. Having reached full capacity in June 2015, the Oxides Plant added 2.5 Moz (77 t) last year, registering the second largest increase in the country. Losses at Pallancata amounted to 2.9 Moz (89 t), a drop of 44%, following a change in the mine plan which resulted in a 50% decrease in ore production. Although there were several production losses at lead/zinc mines, the key driver was higher production from Yauli, where higher throughput and grades from the Andaychagua deposit added 1.4 Moz (46 t) year-on-year.

The second largest gain came from **Argentina**, where production rose by 5.6 Moz (174 t), stemming primarily from the gold sector. Having commenced in July 2014, commercial production was declared at Cerro Negro on January 1st 2015, adding 3.9 Moz (122 t) in its first full year of operation. Casposo also recorded an increase from the mining and processing of higher grades from the Aztec and INCA veins. This was, however, partially offset by a 35% drop in silver output at Alumbrera on lower grades. In the primary silver sector, the marginal increase in production was primarily driven by higher output at Pirquitas, where higher recoveries and a 15% jump in mined grades led to a 1.6 Moz (50 t) increase in production.

Having become a significant silver mining country in 2014, production in **Guatemala** showed a marginal increase year-on-year. After reaching commercial production in January 2014, operations at Escobal focused on increasing throughput over 2015, but accompanied by a 17% drop in head grades silver output was essentially flat year-on-year. **Chilean** mine supply showed a sharp contrast to 2014's growth, as production fell by 2.2 Moz (69 t) on the back of lower grades at El Peñón and Cerro Bayo which between the two operations produced 1.6 Moz (49 t) less silver in 2015. The drop at El Peñón was weighted to the second half of the year, owing to lower grades due to mine sequencing.

Further losses were recorded for **Bolivia**, where production fell by 1.3 Moz (39 t), primarily led by a contraction in output from mining co-operatives, which represent roughly 90% of the mining labor force in Bolivia. In addition, losses at San Bartolomé were witnessed as grades, recoveries and throughput dropped. We estimate that production at San Cristobal rose by approximately 1.2 Moz (39 t).

MINE PRODUCTION IN THE AMERICAS



Source: GFMS, Thomson Reuters

ASIA

Silver mine output from Asia rose last year, by 1% to 165.1 Moz (5,136 t), following a 3% drop in 2014. The bulk of the reduction originated from lead and zinc production sources with a lesser drop from primary silver mines. The bulk of the loss could be traced to mines in China and Kazakhstan, partly offset by higher production in India, Indonesia and Mongolia.

Chinese mine production contracted for the second consecutive year, to total 109.1 Moz (3,392 t), posting the second largest country fall last year with a decrease of 3.4 Moz (106 t). The drop was driven by lower silver output from both domestic primary silver and from lead and zinc production. The primary silver industry contracted by more than 10%; although output from China's largest primary silver mining complex, Ying was steady year-on-year, we estimate supply from Wuping Zijin fell to less than half its 2014 volume, from 2.0 Moz (62 t). In the case of the lead-zinc sector, both economics and environmental factors are behind the recorded drop, with lower base metals prices leading to closure of smaller, higher cost lead-zinc mines.

Also significant to the Chinese silver industry have been policy decisions implemented last year; the Ministry of Industry and Information Technology introduced more stringent definitions and requirements for mine development in order to raise the barrier to entry for greenfields project developers. In addition, there have reportedly been growing instances of smaller, less environmentally compliant mines being closed for reasons such as poor tailings management. The guidelines issued in 2015 stipulated that greenfields "small" lead-zinc mining projects must have a minimum design capacity of 100,000 tons per annum (tpa) of ore, with reserves to support a mine life of 10 years or more, and also imposed additional environmental planning conditions. This compares with 2007 guidelines that stated minimum capacity requirements of 30,000 tpa. Of relevance domestically to the downstream industry rather than the mines, Chinese smelters were given a legislative boost last year after the Chinese government announced a relaxation of its import ban on 'silver ores and concentrates' (under the Harmonized System code 26161000) in November 2015, an action that is expected to lead to increased flows of base metal concentrates with higher silver assays into China.

Kazakhstan's production of mined silver decreased again in 2015. Falls were noted in both the zinc and copper sectors last year, with production from Kazzinc and from Kaz Minerals' East Region assets lower by 15% and 10% respectively. Kazakhstan has actively stepped up efforts to promote its domestic precious metals refining capacity, treating mine doré and scrap from several international sources.

Silver production in **India** showed a notable rise last year, of more than two-fifths, or by 3.6 Moz (113 t), to reach a record production total for the country of 12.0 Moz (374 t). Higher ore volumes and grade from the Sindesar Khurd mine in the second half of the year were behind much of this gain, amid a period of otherwise lower output as the company's flagship Rampura Agucha transitions from open pit to underground mining. Silver production in Indonesia showed a gain of more than one-quarter last year with a greater than ten-fold rise in silver output at Batu Hijau (following depressed production in 2014) more than offsetting losses from Grasberg, Pongkor and Toka Tindung.

OCEANIA

Production in Oceania fell by 4.0 Moz (125 t), or 7%, owing to lower production from several major silver-producing mines in **Australia**. This is a less severe assessment than government data which pointed to a 26% drop. Within the primary silver industry, losses extended for a third consecutive year due to an 11% drop in grades at Cannington, causing output to fall by 2.5 Moz (77 t). Another meaningful drop came from the Mount Carlton gold mine, following the depletion of silver-rich A39 deposit in late-2014. Over 2015, mining activities focused on the medium to high gold grade zones of the V2 deposit, causing silver production to drop by 1.75 Moz (54 t). Proving a partial offset, a restart at Manuka (formerly Wonawinta) led an increase before Black Oak Minerals entered voluntary administration in late October 2015.

In contrast to 2014, Australia's base metal industry contracted by an estimated 1.3 Moz (40 t) as losses from Mount Isa, Jaguar and Rosebery more than offset gains from a start-up at Dugald River and Century on higher grades. At Mount Isa, the decision to cut zinc production to preserve the value of reserves in October 2015 led to a 0.3 Moz (10 t), or 5%, drop in production. Jaguar and Rosebery achieved record throughput, but the dominant

AN OVERVIEW OF CORPORATE TRANSACTIONS

The year started slowly in terms of transactions with the first major deal coming in March when Hecla Mining purchased Revett Minerals in a $20M all stock-transaction. This enabled Hecla to advance the newly acquired Rock Creek silver-copper project in Montana. Agnico-Eagle Mines acquired Soltoro in April, picking up the El Rayo silver-gold project contiguous with Agnico's El Barqueno project in Mexico, in a cash and shares deal valued at C$32M. In June, the Brazilian conglomerate Votorantim increased its stake in the Peruvian zinc miner, Minera Milpo from 50% to 60% in a deal estimated at $118M. In 2015 Milpo produced 7.6 Moz (238 t) of silver as a by-product of zinc mining. On July 27th, First Majestic Silver announced that it would acquire SilverCrest Mines, in a cash and shares transaction valued at C$154M. With that First Majestic added a sixth producing mine in Mexico, Santa Elena to its portfolio. Meanwhile in September Oceanus Resources acquired El Tigre Silver Corp and with it an historically producing silver and gold property by the same name in Sonora, Mexico, in an all-share deal valued at $5M. December saw the purchase of an 8.8% stake in Miniere de Touissit, the second largest silver producer in Morocco, by the private firm Adp I Luxembourg, in a deal estimated at $16M.

There were four silver streaming deals signed in 2015, for combined cash transactions of $2.3Bn. Two of these were purely for silver production and both at one mine, Antamina. On October 7th Franco Nevada agreed a payment of $610Min cash to Teck Resources, in return for the sale of silver output from Teck's attributable 22.5% interest in the mine, using a silver payability factor of 90%, at 5% of the silver price until 86 Moz (2,675 t) has been delivered, when it falls by a third. Less than one month later, Silver Wheaton and Glencore announced that the former would pay $900M for all the silver production from the latter's 33.75% stake in Antamina until 140 Moz (4,354 t) has been delivered at which point they will receive 66% of Glencore's share. Silver Wheaton will then pay 20% of spot for each ounce delivered. During July and August, Royal Gold made polymetallic streaming deals with New Gold and Barrick Gold at their Rainy River and Pueblo Viejo mines respectively amounting to $785M in total.

factor was the lower grade of material being processed, leading to a 0.3 Moz (9 t) fall in output

EUROPE

European silver production increased by 9.1 Moz (284 t), the largest annual increase since 2003, to a total of 120.4 Moz (3,746 t). This growth was driven by a 14% increase in output from **Russia's** largest primary silver mine, Dukat, which increased silver production by 2.4 Moz (87t) in 2015 thanks to an increase in ore processing rate and silver grade, both up by 13% year-on-year. Russia's total mine output rose to 50.5 Moz (1,572 t) the fifth consecutive annual rise and the highest level of output for over twenty years. We estimate that the country's gold mines produced an additional 0.9 Moz (28.0 t) of silver in 2015, with Kupol and Kubaka adding a combined 1.0 Moz (31.1 t). This increase more than offset a 32%, 0.5 Moz (15.6 t) decline in silver output from Polymetal's gold operations in Okhotsk as the Khakanja open pit ceased production. Silver volumes from Russia's lead/zinc and copper mining industries are estimated to have increased by 0.3 Moz (9 t) in trend with marginally higher output since 2010.

Swedish silver mine output increased by 3.1 Moz (96 t), or 25%, to a total of 15.9 Moz (494 t) the sixth largest annual increase at a country level. This gain can largely be attributed to an expansion at Garpenberg realizing a 2.3 Moz (70 t) increase in silver output to a total of 9.3 Moz (288 t). Despite lower milling volumes from Boliden Area, silver output was boosted by 0.5 Moz (17 t) due to a 40% increase in grade.

Output from **Poland** increased by 2% to total of 41.5 Moz (1,291 t), the highest level of production since 2003. Output from KGHM Polska Miedź's silver bearing copper mines, 99% of Polish output, was robust, reaching 41.2 Moz (1,283 t) last year on the back of higher ore production volumes.

AFRICA

African mine supply rose slightly by 6% year-on-year to 14.8 Moz (461 t). **Moroccan** output recorded an 8% gain, rising to 9.5 Moz (296 t) this is mostly attributable to the continent's largest silver producing mine, Imiter, production at which rose by 12% to 6.6 Moz (205 t) due to an appreciable increase in the tonnage processed. Although silver in concentrate production fell, sales of silver-rich pyrite boosted output from Bisha in **Eritrea,** which took the nation's output to 2.3 Moz (70 t) last year. Africa's largest decrease in silver production was recorded at the Boseto copper mine in **Botswana** which shut down in February 2015, having produced 0.7 Moz (22 t). The owner, Discovery Metals was wound up in June and the mine bought by Cupric Canyon Copper, which plans to re-start production in July 2016.

AVERAGE PRICES OF SOURCE METALS

($/ton)	2011	2012	2013	2014	2015	Change y-o-y
Lead 3-Mth	2,390	2,074	2,157	2,113	1,795	-15%
Zinc 3-Mth	2,210	1,964	1,940	2,167	1,938	-11%
Copper 3-Mth	8,821	7,945	7,345	6,827	5,493	-20%
Gold ($/oz)	1,572	1,669	1,411	1,266	1,160	-8%

Source: GFMS, Thomson Reuters; LME; ILZSG

WORLD MINE PRODUCTION OF SOURCE METALS

(Thousand tons)	2011	2012	2013	2014	2015	Change y-o-y
Lead	4,630	4,920	5,264	4,944	4,360	-12%
Zinc	12,582	12,898	13,054	13,512	13,463	0%
Copper	16,049	16,634	17,994	18,370	19,022	4%
Gold (tons)	2,829	2,850	3,042	3,131	3,158	1%

Source: GFMS, Thomson Reuters; ILZSG

OUTLOOK

- ***Silver mine production is expected to suffer losses during 2016 as a consequence of supply cuts in lead and zinc production, in combination with lower forecast output from both the primary silver and gold industries.***

Having reached a new peak in 2015, silver mine supply is expected to commence a sustained downtrend this year, with a forecast decrease of 2%. This outlook comes as a consequence of producers having reduced capital spending in an attempt to protect margins, with global silver production vulnerable to cutbacks in both the precious and base metals sectors.

The lead/zinc sector suffered the most substantial losses during 2015, and this trend is expected to continue this year. Significant supply cutbacks have already been announced in the zinc mining industry, including at Glencore's Australian zinc operations, Mount Isa and McArthur River. Loss of supply from Century, which ceased mining operations late last year, will also contribute to lower output from the sector.

Having been one of the driving forces behind higher output in 2015, on the back of additional supply from large operations such as Saucito and Dukat, the primary silver sector is expected to give back some of its gains this year. Higher output from operations such as San Jose in Mexico, where a plant expansion is due for commissioning in 2016, is expected to be more than offset by lower production from several large primary silver mines, including Pirquitas and Palmarejo. Likewise, in the gold industry, gains to silver production in 2015 came from new supply from Cerro Negro and higher output from established operations such as San Dimas. This momentum is not expected to be sustained during 2016, with the outlook for the larger operations generally flat to down, and silver output falls are expected as a consequence of a lack of new supply under development in the gold mining industry.

Copper mines are the only sector expected to contribute a higher volume of silver during 2016. This exception to the general silver production trend is attributable to a number of recently commissioned copper operations ramping up to full capacity during this year, for example Constancia and Las Bambas. Further support is expected following expansions at established operations including Cerro Verde and Antapaccay.

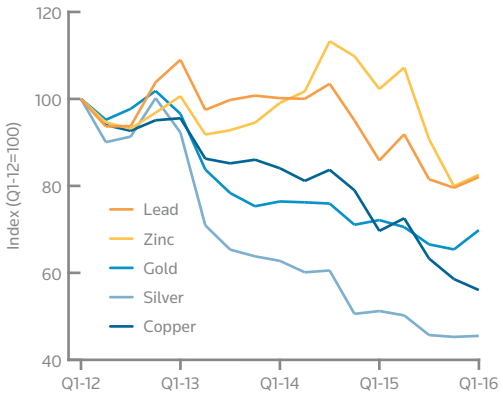
BY-PRODUCT ANALYSIS

- ***Production from the primary silver sector continued to grow in 2015, albeit at a lower rate, rising by 5%.***

- ***Silver produced as a by-product of other metals rose by 6.7 Moz (209 t), or 1%, last year.***

Primary silver production rose last year by 11.7 Moz (364 t) despite a strong contraction at two of the largest primary silver operations in the world, Cannington and Fresnillo, which fell by a combined 7.0 Moz (219 t). In terms of output, strong performance at the company level came from Goldcorp (+3.6 Moz, 112 t), Fresnillo plc (+2.7 Moz, 83 t), KGHM (+1.1 Moz, 35 t) and Hecla (+0.5 Moz, 16 t). At the mine level, a ramp up at

INDEXED SILVER & BY-PRODUCT METAL PRICES



Source: LME, Thomson Reuters

SILVER OUTPUT BY SOURCE METAL

(million ounces)	2014 Output	% of Total	2015 Output	% of Total	Change y-o-y
Primary	253.0	29%	264.7	30%	5%
Gold	112.7	13%	118.8	13%	5%
Lead/Zinc	317.8	37%	305.8	34%	-4%
Copper	180.0	21%	192.5	22%	7%
Other	4.8	1%	4.8	1%	1%

Source: GFMS, Thomson Reuters

Saucito (+6.6 Moz, 205 t), Dukat (+2.8 Moz, 87 t), Cerro de Pasco Oxides Plant (+2.5 Moz, 78 t), and higher grades at Uchucchacua (+1.9 Moz, 58 t) contributed significantly to the overall trend.

In line with an increase in gold production, silver output from the gold sector rose by an estimated 6.2 Moz (192 t), at a similar rate to last year despite a further decrease in the gold price. The majority of the increase is attributable to the ramp up at Cerro Negro (+4.0 Moz, 122 t), Inmaculada (+2.1 Moz, 64 t), and higher grades at San Dimas (+2.2 Moz, 67 t).

Silver by-product metals copper, zinc and lead suffered double-digit price declines on the London Metal Exchange (LME) in 2015 as their respective fundamentals deteriorated. LME benchmark copper led the way lower last year, losing almost one-fifth of its value on an annual basis to average $5,493/ton. A halving in the pace of global demand growth to below 2% and a respectable 2.3% rise in output left the market recording its fourth consecutive year of surplus at 363,000 tons.

China's ongoing transition to a consumer-based economy and continued weakness in the property market had a large part to play in the sluggishness of global demand. Meanwhile, producers were slow to respond. A flurry of mine production cutbacks in the final months of 2015, with Glencore at the vanguard have since petered out.

Global copper mine output grew by 3.5% last year, driven by strong growth in Peru in particular, and helped by ramp-ups such as that of HudBay's Constancia mine and the expansion at Freeport's Cerro Verde.

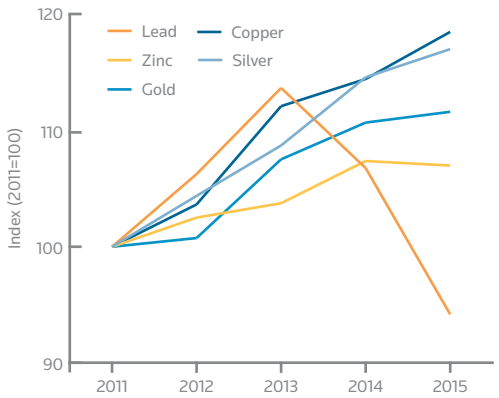
The zinc market fared somewhat better on the whole in 2015 as prices fell by around 11% over the period to average $1,938/ton. In the early months, the metal managed to buck the generally weaker tone elsewhere, buoyed by looming closures of the large Century and Lisheen mines in Australia and Ireland respectively.

However, zinc subsequently fell from grace. For one, it became clear that ample stocks of concentrate in China,on top of a 0.2% rise in global mine output, would be sufficient to support refined production growth at reasonable levels for some time to come. Secondly, the demand picture had deteriorated significantly as the ailing steel sector inevitably hurt offtake of zinc for use in galvanising, leaving the market in a 203,000 ton surplus last year.

Zinc mine output in top producer China may have fallen last year, but was more than offset by strong growth in other large producing nations, including India (+19%) due to increased output from Hindustan Zinc. Furthermore, Chinese mine output threatens to pick up again this year, encouraged by stronger domestic smelter demand on the back of lower spot and annual treatment charges for imported concentrate. The strong recovery in the zinc price over the first quarter may also incentivize Chinese mines, particularly smaller ones, to return to the market.

Global refined lead production may have been flat in 2015, due largely to factors such as low domestic mine supply, rising costs due to stricter environmental rules, and low by-product revenues in biggest producer from China. However, this was more than offset by a 1.7% decline in demand which left it short of supply by almost 100,000 tonnes and prices some 15% lower than in 2014. The drop-off in demand for E-bikes in China was largely responsible for the overall fall in consumption; a situation which will continue to feature in 2016.

INDEXED GLOBAL METAL MINE PRODUCTION



Source: GFMS, Thomson Reuters; ILZSG

PRODUCTION COSTS

- **On a co-product basis, cash costs with capex for 2015 averaged $11.74/oz, an 11% drop relative to 2014.**

In light of falling silver prices and the consequent squeeze on margins, GFMS has sought to present silver producers' costs in a way that facilitates a clearer relationship between costs and margin. This involved a re-interpretation of the data to also present costs on a co-product basis, including capital expenditure (capex). While cash cost net of by-product credits is a useful metric, it is vulnerable to swings in the pricing of silver's by-product metals, which can distort the picture.

Silver Total Cash Costs (TCC) net of by-product credits fell for the third consecutive year in 2015, by 3% to $6.66/oz. Increased output led to lower unit costs in Mexico, the world's top producer, which was the influential factor behind the global trend. However, this was partially offset by sharply higher costs in Peru, Argentina, Chile and the United States, magnified by the drop in gold (8%), lead (15%), zinc (11%) and copper prices (20%). In 2015, primary silver producers accounted for 30% of global output and our cost data capture represented 81% of primary supply

On a co-product accounting basis, TCC + capex in 2015 stood at $11.74/oz, down 11% from last year. The principal element of this reduction was aggressively lower capex, with lower fuel prices and importantly, weaker local currencies reducing costs expressed in U.S. dollars. A pronounced weakening of most 'producer currencies' versus the U.S. dollar since the second half of 2014 has offered substantial cost benefit. In 2015 compared to 2014, the Mexican peso, Peruvian sol, Australian dollar and Argentine peso were respectively 16%, 11%, 17% and 12% weaker. By the co-product TCC+capex measure, 7% of the primary industry, was 'underwater' against the annual average silver price of $15.68/oz, a 1% increase relative to 2014.

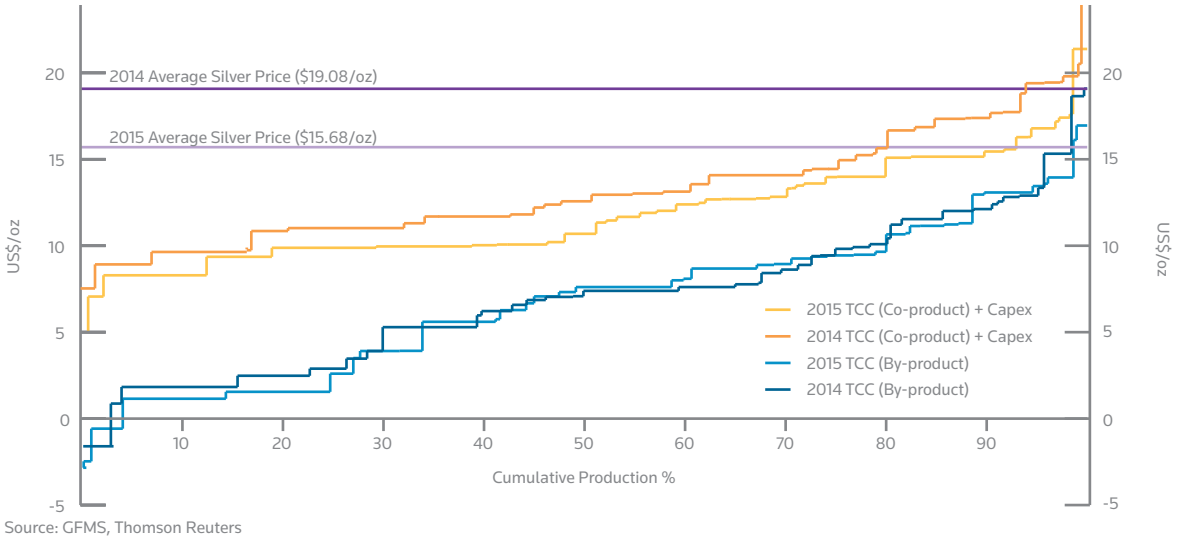
The most significant production gain in the primary silver industry was seen in Mexico, with the ramp-up of Saucito II contributing 6.6 Moz (205 t) additional production and lowering the global average TCC + capex by $0.39/oz. TCC + capex for mines in Mexico fell by 14% to $12.31/oz, while Peruvian and Australian operations saw a 10% reduction in costs to $10.49/oz and $9.88/oz respectively. Within Peru, operational efficiencies at Huaron led to greater unit cost savings, lowering the TCC + capex to $10.49/oz. Although U.S. based primary silver mines did not have the same advantage of currency devaluation, as a group they succeeded in cutting cost by 8% to $13.21/oz largely thanks to higher production. This was particularly the case at Rochester, where costs also benefitted from lower diesel costs and equipment rentals.

SILVER MINE PRODUCTION COSTS

(US$/oz unless stated)	2012	2013	2014	2015
TCC (by-product)	9.19	9.18	6.87	6.66
TCC (co-product)	-	-	10.44	9.60
TCC (co-product) + Capex	-	-	13.14	11.74
Average Silver Price	31.15	23.79	19.08	15.68
Sample Size (Moz)	167.5	178.2	214.6	214.6

Source: GFMS, Thomson Reuters

SILVER MINING COSTS



Source: GFMS, Thomson Reuters

PRODUCER HEDGING

- ***In 2015, the delta-adjusted hedge book grew by 7.8 Moz (244 t).***

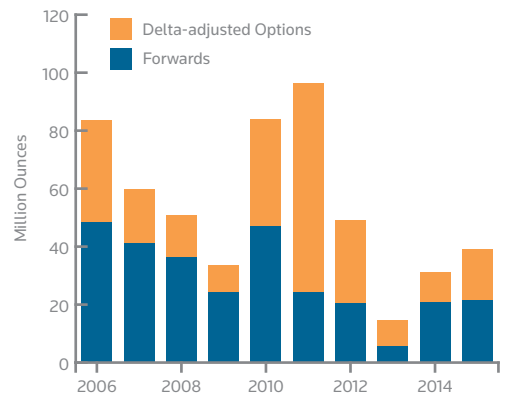
Over the course of 2015, the delta-adjusted hedge book rose moderately, expanding by 7.8 Moz (244 t) as fresh hedging from Industrias Peñoles and Hochschild Mining more than offset the settlement of contracts by Minera Frisco and Coeur Mining as hedges matured. Much of the activity was noted in the first half of the year, followed by a slowdown in H2 2015, which coupled with the overall expansion of the option book, the composition of the hedge book stood near 2010 levels as options contract became more predominant. Forward sales also increased year-on-year, albeit at a lower rate than options, adding almost 0.6 Moz (18 t) in 2015. With the majority of these positions due to expire between 2016 and 2019, the proportion of the hedge book composed of option contracts, when measured by the nominal scale of the hedge book (number of contracts) rather than by option delta, rose from 58% at end-2014 to 69% at end-2015. This left the delta-adjusted position of the hedge book at end of the period at 39.0 Moz (1,213 t).

Activity in 2015 was most notably driven by the activities of Peñoles, which entered into a series of zero-cost collars covering 20.6 Moz (641 t), though almost half of this was in replacement for maturing positions, or an additional 11.9 Moz (370 t) of output relative to last year. With an average floor price of $15.06/oz, and a cap of $19.06/oz, the puts from Peñoles' collar structure sat deep-in-the-money at end-2015. At end-2015, Peñoles' hedge book accounted for 40% of the global producer hedge book with a delta-adjusted balance of 16.2 Moz (504 t).

Among other companies, 2015 saw the return of two companies with a 'track record' of hedging, namely Hochschild and Minera Frisco, absent since 2009 and 2011 respectively. Within 2015, Hochschild entered into 6 Moz (187 t) of forward sales at $17.75/oz for delivery in 2015, followed by a second similar hedge for an additional 6 Moz (187 t) at $15.93/oz. The second tranche is scheduled to be delivered over 2016, together with zero-cost collar covering 3 Moz (93 t) of output at an average floor price of $14.0/oz, and a cap of $17.6/oz. At end-2015, Hochschild's hedge book covered 55% of its 2016 production. Turning to Minera Frisco, the Mexican silver producer hedged 4.8 Moz (149 t) of output at an average price of $16.14/oz for delivery in 2016.

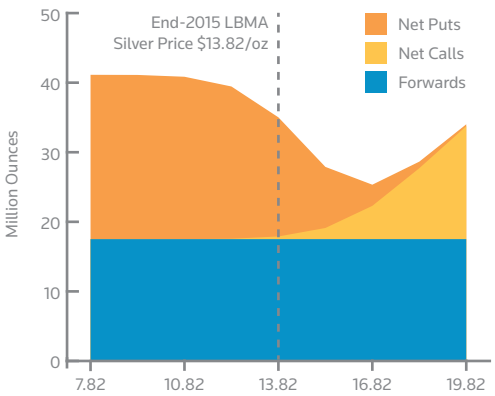
The GFMS team at Thomson Reuters calculates the delta-adjusted global hedge book volume using market data and proprietary tools from Thomson Reuters Eikon. The chart below plots sensitivity of the hedge book with respect to changes in the silver price, assuming that volatility, interest rates and other factors remain equal. Had silver prices dropped by an additional $3/oz, the volume of silver delta-hedged against the option book would have risen by 5.8 Moz (182 t), while a $3/oz increase would have resulted in a 9.7 Moz (301 t) drop in volume delta-hedged. As the bought put portion of the book on average stood closer to being in-the-money than sold call component, the option book acted more as a price floor than a cap, which is reflected by the additional sensitivity of the hedge book to the downside.

PRODUCER HEDGING: OUTSTANDING POSITIONS



Source: GFMS, Thomson Reuters

SENSITIVITY OF THE GLOBAL HEDGE BOOK



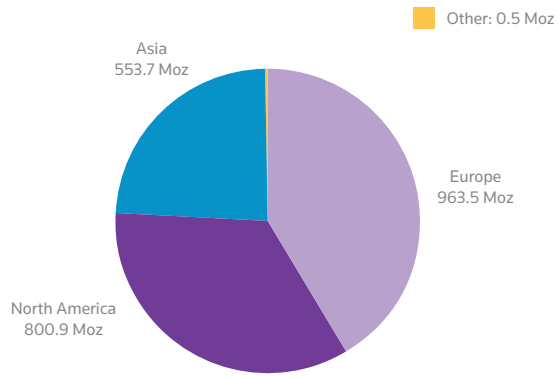
Source: GFMS, Thomson Reuters

5. SUPPLY FROM ABOVE-GROUND STOCKS

- ***Identifiable above-ground stocks rose by 9% year-on-year, to 2,301 Moz (71,578 t) by the end of 2015. These stocks could cover 25 months of physical demand, the highest level of cover since 1995 and up from 13 months in 2005.***

- ***Scrap recycling added 146.1 Moz (4,545 t) to annual supply in 2015, down 13% from the previous year. This drop was the fourth successive decline and was led by a slump in flows from China where supply fell 40%.***

BULLION STOCKS - REGIONAL BREAKDOWN IN 2015



Source: GFMS, Thomson Reuters

OVERVIEW

While some silver gets lost, the majority of silver ever produced remains above ground today and is theoretically available to the market in various forms. Some of this above-ground stock serves a dedicated use until it is recycled back into a homogenous form while the balance is stored in vaults as bullion. This chapter covers shifts in above-ground bullion stocks as well as additions to annual supply from scrap recycling.

A large portion of the above-ground silver bullion stock is tracked by GFMS in order to glean insight about price movements and demand trends. GFMS tracks bullion stocks held by governments, stockpiled by industry, stored at futures exchange warehouses, and held in custodian vaults (allocated or unallocated and including ETPs). Silver held in custodian vaults is estimated based on data collection of ETP silver holdings and other reported volumes, a confidential survey, and other field research.

Silver bullion stocks are mostly composed of metal allocated to ETP investors, institutional and hedge fund investors and other kinds of longer-term holders. Silver is relatively expensive to store because its volume to price ratio is higher than that of gold.

Additionally, GFMS tracks the recycling of above-ground silver from fabricated sources, namely coins, jewelry, silverware, e-waste, photographic papers and other "open loop" sources of scrap. This scrap material gets recycled and refined back into bullion form. While this newly recycled silver does not increase above-ground stocks, but mobilizes above-ground stocks such that they can be reused or stockpiled in bullion form. Annual changes in silver scrap flow are primarily influenced by silver prices and economic conditions.

IDENTIFIABLE BULLION STOCKS

Identifiable bullion stocks can be divided into two categories: stocks that are reported and unreported GFMS

IDENTIFIABLE ABOVE-GROUND SILVER BULLION STOCKS

(Moz)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Custodian Vaults*	729.0	726.8	605.5	839.3	826.5	933.9	806.7	1,008.4	1,207.4	1,422.4
ETPs	158.3	213.1	314.7	472.0	601.6	577.5	632.8	635.3	635.5	617.8
Exchange*	106.4	125.9	114.7	93.6	83.4	98.0	159.3	168.1	158.1	154.4
Government	249.2	206.7	176.2	160.5	116.4	104.3	97.0	89.1	89.1	89.1
Industry	25.8	16.6	19.5	16.6	21.6	20.0	21.8	19.1	17.0	17.6
Total	**1,268.6**	**1,289.2**	**1,230.6**	**1,582.1**	**1,649.5**	**1,733.7**	**1,717.7**	**1,919.9**	**2,107.1**	**2,301.3**
Months of Demand	16	14	17	18	18	21	18	20	22	25

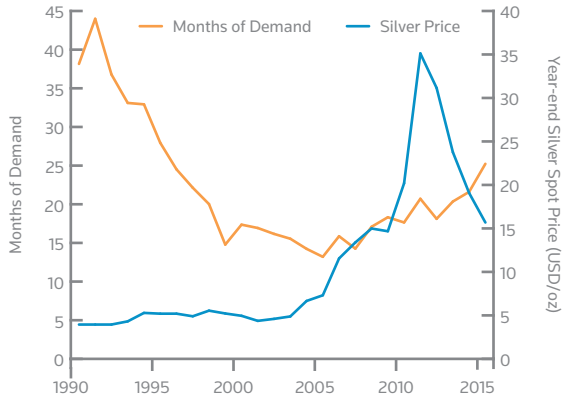
Source: GFMS, Thomson Reuters; Respective ETP issuers, exchange websites, Japan Ministry of Economy, Trade and Industry, USGS

*Custodian vault and exchange warehouse stocks exclude stocks allocated to ETPs.

stock estimates, that are based on confidential surveys and field research. Reported stocks include our industry, futures exchange, and ETP categories as well as the government category for some countries. Unreported stocks include our custodian vault category and the lion's share of our government category. Reported stocks accounted for 35% of the total identifiable bullion stock series in 2015. These same stocks accounted for 48% of the total in 2012, albeit that the lower level in 2015 was more than double the level in 2004. The long term uptrend is testament to the growing proliferation of ETPs. The more recent downtrend is due to an increase in the recorded level of unreported above-ground stocks, particularly in Asia following new information and data gathered over time.

Total identifiable above-ground bullion stocks were 2,301.3 Moz (71,578 t) at the end of 2015, up 9% from year ago levels. Total stocks have been rising since 2012. This follows an upward revision after field research to our estimates for the opaque area of custodian vault stocks of on average of 10% a year for the last three years with a bias to the most recent year. This suggests silver stocks have been boosted by lower prices in some areas and sticky holders in others. Indeed, field research has confirmed that many investors are reluctant to sell silver accumulated in previous years. Further, ETP holdings only edged marginally lower and have been rising in 2016. While exchange stocks have dropped and industry stocks have risen a fraction, these slight changes (and no change from government stocks) are swamped by the much more significant increase in custodian vault stocks (excluding ETP allocations), chiefly in Asia and North America.

IDENTIFIABLE STOCKS EXPRESSED AS MONTHS OF DEMAND



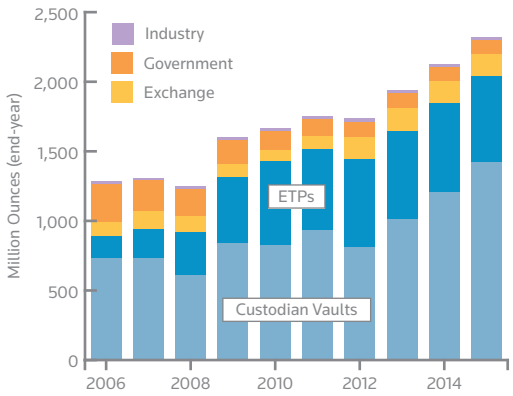
Source: GFMS, Thomson Reuters

At the end of 2015, total identifiable bullion stocks represented 25 months of total physical demand, the highest since 1996 and up from a trough of 13 months in 2005. In the early 1990s, identifiable stocks represented 44 months of demand, mostly due to significantly higher government inventories. Government inventories have declined due to silver's reduced role in monetary systems and circulated coin production. As illustrated in the chart above, nearly flat silver prices in the 1990s were accompanied by a rapid decline in stocks expressed as months of demand. Only when stock cover reached its lowest point of 13 months of demand in 2005 did prices begin to materially increase.

CUSTODIAN VAULT STOCKS

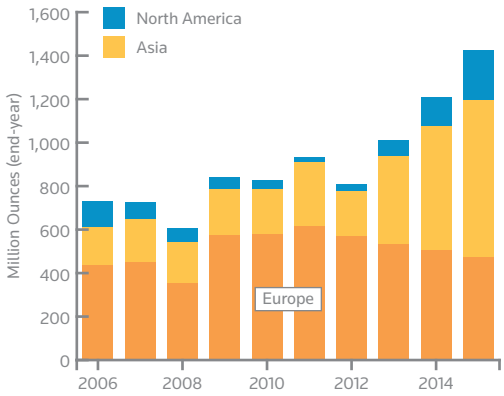
Custodian vault stock data excludes ETP holdings, but it is important to note that most custodians of ETP silver stocks

IDENTIFIABLE ABOVE-GROUND SILVER INVENTORIES



Source: GFMS, Thomson Reuters; exchanges, ETF issuers, METI, USGS

CUSTODIAN VAULT STOCKS*



Source: GFMS, Thomson Reuters *Stocks exclude silver stocks allocated to ETFs

also store silver in vaults that are not allocated to ETPs. The same is true of futures exchange warehouses.

Custodian vault stocks increased by 215.0 Moz (6,911 t) to total 1,422.4 Moz (45,730 t) by end 2015. Indeed, custodian vault stocks including ETP allocations have increased at an 8% compound annual growth rate over the past fifteen years. Over this period ETP holdings grew from less than 1% of these stocks to almost 80% at their 2012 peak. It is worth noting though, that this percentage dropped below 50 last year, for the first time since 2008. While ETP holdings fell in 2015, this drop is chiefly due to the marked rise in Asian and North American vault stocks, which was partially offset by a decline in European stocks.

Stocks in Asia rose by 153.7 Moz (4,781 t) last year. Central to this was the fact that Chinese banks continued to expand their precious metals leasing businesses in 2015, which have required increasing holdings of precious metals. India also saw a marked increase in vaulted silver stocks last year and indeed silver imports touched a record high. Singapore's vaulted stocks rose by more than half in 2015 and research suggests there is still demand for new capacity in the city state. Asia accounted for 51% of custodian vault stocks last year, up from 26% as recently as 2012, driven particularly by the growth in the Chinese leasing market. Field research indicates this source of growth may well have come to a halt in 2016.

In a similar vein, North American stocks, not allocated to ETPs, also rose appreciably, by almost 70% to 225.6 Moz (7,050 t) by the end of 2015. This fits with the backdrop of very healthy retail investment, particularly during the summer months, resulting in a rise in bullion stocks. This also could have been aided by a reallocation by some North American investors from their ETP holdings, which fell by 3% last year.

In contrast, European vault stocks, which accounted for 33% of total custodian vault stocks in 2015, declined 6% to 472.5 Moz (14,696 t). This decline can be attributed to reduced institutional investor interest in the region. Indeed European ETP holdings fell by 3% in 2015.

FUTURES EXCHANGES

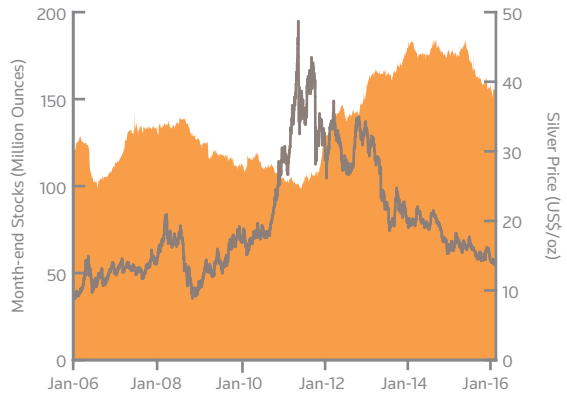
Any futures exchange that offers physical settlement will likely store metal in a vault. Only about 2% of futures contracts are settled in physical, so it is not necessary to hold metal that equals the total level of open interest.

Only three exchanges report silver stocks: COMEX in the United States, the Tokyo Commodity Exchange (TOCOM), and the Shanghai Futures Exchange (SHFE). These stocks totaled 180.0 Moz (5,598 t) at the end of 2015, a fraction higher than a year earlier. Stocks on the SHFE rose by 15.2 Moz (472 t) last year. This increase reversed the dramatic decline in 2014 when Chinese producers were holding off from selling silver into the market, awaiting higher prices. Therefore, the tightness in the Chinese market was due to lower velocity rather than lower supply. However, SHFE stocks had already doubled by the end of the first quarter of 2015, and by the end of the year had quadrupled suggesting that the tightness in supply in 2014 is behind us. It is worth noting though, that even this higher level was still only an eighth of the level on COMEX.

TOCOM inventories decreased 26% last year to more than reverse the increase of the previous year and leaving stocks at 0.13 Moz (4.1 t) at the end of 2015, the lowest year-end level in over 30 years.

These increases on the Asian exchanges were almost exactly offset by a drop in COMEX stocks of 14.9 Moz (462 t)

COMEX WAREHOUSE STOCKS



Source: COMEX

SHFE SILVER STOCKS

(Million ounces; end period)

	Q1	Q2	Q3	Q4
2013	35.7	20.0	14.8	14.4
2014	12.3	7.7	2.6	3.9
2015	9.2	12.1	10.2	19.2

Source: SHFE

SILVER ETP HOLDINGS BY VAULT LOCATION

While a more detailed discussion about silver ETP holdings is contained in the Investment chapter, this chapter's ETP discussion is centered on the difference between ETP holdings by investor domicile and holdings by vault location. ETP holdings are a large and transparent portion of above-ground silver bullion stocks, accounting for 27% of the total as of the end of last year. ETP holdings are a relatively new category in our identifiable above-ground stock series, having only accounted for 3% of the total in 2005.

U.S. investors own 55% of silver ETP holdings, based on an ETP's primary exchange, while the London Stock Exchange silver ETP investors only account for 9% of holdings and silver ETPs traded on the Toronto Stock Exchange account for 22% of holdings. Swiss investors own 13% of holdings based on Swiss exchange-traded silver funds. Investors in Japan, Hong Kong, and Australia make up the 1% balance.

In contrast, 60.5% of global silver ETP holdings are vaulted in the United Kingdom while only 4% of holdings are vaulted in the United States. Switzerland is home to 13% of global ETP holdings, broadly in line with its share of investor ownership. Similarly, Canada is home to 22% of holdings. Japanese ETP-allocated inventories amount to 0.4% of the global total, also in line with Japanese investor ownership.

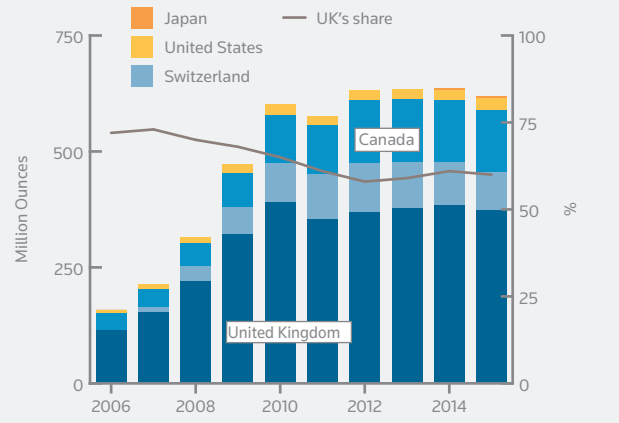
Over time, London's share of ETP holdings by vault location has declined from a peak of 72% at the end of 2006 to below 61% at the end of 2015. Switzerland gained market share in this period, increasing from 0% to 13%. Canada's share has been relatively stable in the period, ranging from 15% to 23% in any given year.

Canada is also home to the first exchange-traded silver-backed security, the Central Fund of Canada, which has been trading on the Toronto Stock Exchange since the 1960s and began holding gold and silver for investors in 1983. Its silver holdings have increased 25-fold since that year.

A common misconception in the market is that massive ETP selloffs would result in the dumping of metal within the country or massive export of metal from the country where ETP sellers are domiciled. This, however, is not necessarily the case, considering the dominance of vault locations within major precious metals trading hubs. Additionally, any offloading of metal from ETP sales will more likely convert the metal in the vault from being allocated to ETP shareholders to part of their unallocated or other allocated holdings. That said, metal could be shipped out of these major hubs should demand grow significantly elsewhere.

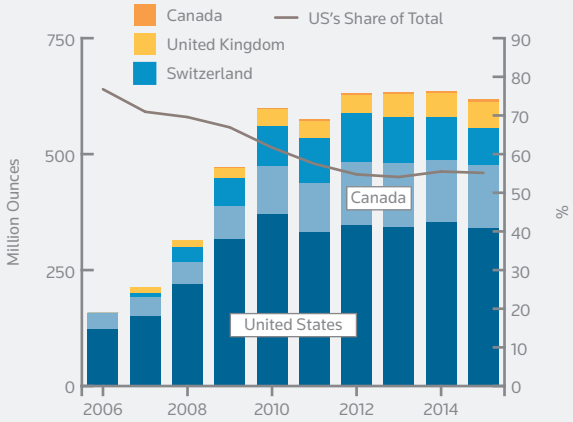
In tracking the actual location of ETP holdings, GFMS is now better equipped to adjust our custodian vault data series as well as to provide a breakdown of above-ground bullion stocks by region. A couple of ETPs use multiple vaults in multiple locations; therefore assigning total holdings of each ETP to the exchange location or to a single location may not be accurate. Additionally, a portion of eligible stocks reported by COMEX are allocated to ETPs. Approximately 21% of the 120.3 Moz (3,744 t) of COMEX eligible stocks at the end of 2015 were allocated to ETPs. We have adjusted for this nuance in our total identifiable bullion stock data as well to avoid double-counting.

SILVER ETP HOLDINGS BY VAULT LOCATION



* "Other" includes Japan, Australia and Hong Kong
Source: GFMS, Thomson Reuters; respective ETP issuers & custodians

SILVER ETP HOLDINGS BY INVESTOR DOMICILE



Source: GFMS, Thomson Reuters; respective ETP issuers & custodians

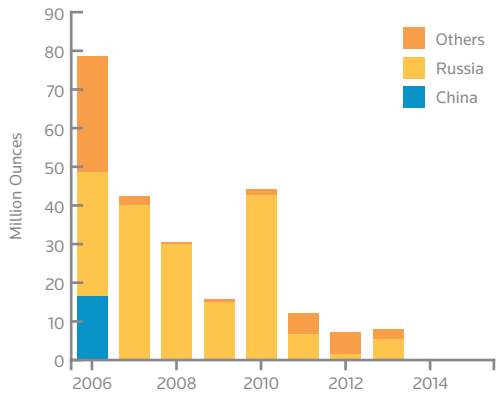
to total 160.7 Moz (4,997 t) at the end of 2015. The drop occurred in the third quarter, unsurprisingly when there was an upsurge in retail investment demand. COMEX stocks consist of eligible and registered stocks. Eligible stocks are stocks in COMEX warehouses that meet the criteria for delivery via the exchange, but cannot be delivered. Registered stocks are stocks that meet the criteria for delivery and can be delivered. Over the course of 2015, eligible stocks trended higher, while registered stocks fell.

ETP silver stocks stored in the United States use eligible stocks reported by the COMEX. As such, we adjust the "Exchange" stock data lower by the amount of ETP stocks vaulted in the United States. This adjustment is reflected in the table located on the first page of this chapter. Excluding ETPs, total exchange stocks were 154.4 Moz (4,802 t) at the end of 2015, down 2% from the previous year.

GOVERNMENT STOCKS

Assessments of silver stocks held by governments are largely based on private information gathered during the course of our field research, as there is little publicly available data on levels of, and changes in, government silver stocks. After minimal sales in both 2012 and 2013, no government sales are estimated to have taken place in 2014 or 2015. While our field research indicates no activity at all, even if a small transaction did take place it would have been at a very low level when compared to the previous fifteen years when disposals averaged 48.4 Moz (1,392 t) per annum over the 1999-2013 period. At end 2015, total government silver stocks amounted to 89 Moz (2,551 t).

NET GOVERNMENT STOCK SALES



Source: GFMS, Thomson Reuters

A crucial change is the absence of any Russian disposals in the last couple of years. The country's silver stocks are far smaller than they were a decade ago. For instance, from 2004 to 2010, gross sales from Russia amounted to over 200 Moz (6,300 t).

Finally, China and India, each of which had been major sellers between the start of this century and 2007, were both absent from the market once again in 2015. As far as China is concerned, it is our understanding that following several years of heavy sales, silver stocks have already been reduced significantly from "excessive" levels.

INDUSTRY

Industry stocks consist of reported Japanese and United States data. Japanese stocks include stockpiles of silver at producer and merchant facilities. U.S. stocks consist of producer, consumer, and dealer stockpiles. Industry stocks totaled 17.6 Moz (547 t) last year, a little higher than in the previous year as the Japanese economy slowed down. It should be noted that these stocks do not include working pipeline stocks, which are not considered to be part of our identifiable bullion stock series.

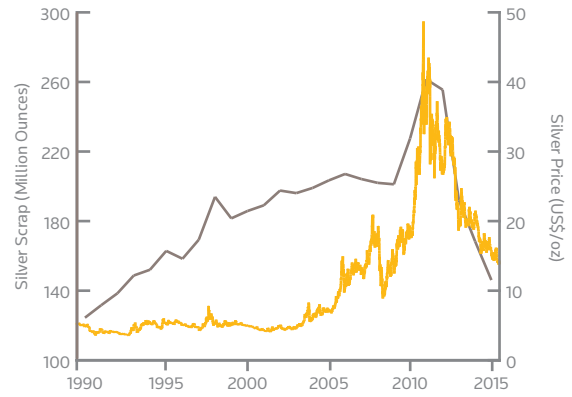
SCRAP

- ***Silver scrap supply dropped by 12.5% to 146.1 Moz (4,545 t), the lowest volume recorded since 1996.***

In 2015 silver scrap supply fell for the fourth successive year, by 12.5% to 146.1 Moz (4,545 t). This was the third year in a row with double digit declines in scrap supply. Overall, it sent the supply from scrap to a 23-year low. As a proportion of total supply, scrap dropped to just 14%, the lowest level since at least the 1980s, after averaging 25% of the total as recently as 2011 and 2012. This decline in supply was a key reason underpinning the physical market remaining in a deficit last year.

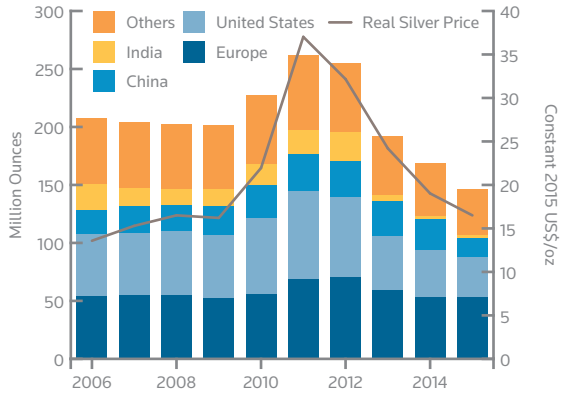
Crucial to the drop in scrap supply was, unsurprisingly, silver prices averaging their lowest level since 2009. That said, prices in some local currencies actually rose, sometimes appreciably and others saw much more modest price declines due to the devaluation of many emerging market currencies. This had some ameliorative impact on flows. This was particularly noticeable for some of the stuttering BRIC economies and some countries in South

WORLD SCRAP SUPPLY



Source: GFMS, Thomson Reuters

WORLD SCRAP SUPPLY



Source: GFMS, Thomson Reuters

America and Africa, where the combination of sharply weaker currencies and economies in recession led to distress sales. As a result, South America, and to lesser extent Africa, were the only regions where we saw an increase in scrap supply.

These though were largely the exceptions that proved the rule, with steep declines in many key Asian markets ensuring that supply from that region dropped below 50 Moz (1,538 t), quite a contrast from the 3-figure totals of 2011 and 2012. Indeed the performance in China was particularly startling, with a drop of 40% fueled by weaker industrial activity and the lower silver price.

Looking in more detail at the performance in major regions and countries we start with Europe, which in 2015 became the largest source of scrap supply. It should be noted though that this was due to the very steep decline in Asia whereas European scrap supply only fell by 1% to 52.7 Moz (1,640 t), a six-year low.

There were a few factors that lessened the drop. Most substantially, almost all European currencies weakened appreciably against the dollar and hence silver price drops were much more modest in local currency terms. Indeed, the sharply depreciating Turkish lira and Russian rouble ensured markedly higher silver prices underpinning supply in these countries. However, it is interesting to note that even though rouble silver prices were appreciably higher this did not prevent a slight fall in silver scrap from that country. Field research indicated that exceptionally high gold scrap flows effectively discouraged collectors and some refiners from taking lower margin silver refining.

One other feature supporting volumes in Europe is increased volumes of e-scrap returning from the market. It should be noted though that this metal content is dropping, due to falling volumes going into electrical applications earlier in the century, so refiners are having to process more to keep recycling metal output stable. Our industry contacts have also indicated that while flows from jewelry and silverware have continued to be under pressure some other smaller areas are growing. One interesting development is in the automotive sector where rising silver content in cars in the early part of this century is leading to increased flows coming back from this source. This is particularly important in Germany and helped that market increase 4% last year.

For the third successive year silver scrap in Central and Eastern Europe fell in 2015, although the 5% drop to almost 3 Moz (91.2 t) was less severe than in the year before. The new local reverse VAT charge introduced in the Czech Republic and similarly in Spain in April 2015, had a dramatic negative impact on scrap volumes in both these countries. This sharp drop directed scrap flows towards some neighboring countries.

Silver scrap in the **United States** totaled 35.3 Moz (1,099 t) in 2015, down 12% from the previous year. This was the fourth consecutive annual drop in scrap generation within the country. Scrap from high-grade sources like jewelry and coins was driven lower by the relatively weak silver price. An improved economy and jobs market also reduced scrap sales among households. Silver scrap from low grade sources, namely electronic waste, dropped by between 15% and 20% last year, which was a stronger rate of decline

TABLE 4 - SUPPLY OF SILVER FROM THE RECYCLING OF SCRAP

(million ounces)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Europe										
Germany	15.1	15.1	14.6	12.6	14.9	16.7	21.6	17.3	14.3	14.9
Russian Federation	8.4	8.8	8.3	8.4	11.5	11.1	10.9	10.0	10.3	10.0
Italy	5.5	5.6	5.9	5.8	6.5	9.7	9.9	8.7	7.9	6.8
United Kingdom	10.9	11.2	10.9	10.2	6.4	11.3	9.8	7.2	5.6	5.8
France	4.5	4.6	5.1	5.5	6.2	7.0	5.9	5.2	4.9	4.9
Turkey	1.1	1.0	1.1	1.1	1.0	1.2	1.0	1.0	1.5	1.7
Austria	1.3	1.2	1.2	1.1	1.1	1.2	1.2	1.2	1.1	1.1
Czech Republic	0.7	0.9	0.9	0.9	1.2	1.6	1.6	1.4	1.4	1.1
Poland	0.7	0.8	0.7	0.7	0.9	1.1	1.2	1.0	0.9	1.0
Netherlands	1.3	1.1	1.1	1.0	1.1	1.2	1.2	0.9	0.8	0.9
Spain	0.4	0.4	0.5	0.5	0.7	1.3	1.3	1.1	1.0	0.8
Sweden	0.9	0.9	0.9	0.8	0.8	0.9	0.9	0.7	0.6	0.7
Belgium	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.5	0.5	0.5
Portugal	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4
Denmark	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4
Slovakia	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
Hungary	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.3	0.3
Finland	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3
Norway	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3
Other Countries	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.0	0.9	1.0
Total Europe	***54.3***	***55.0***	***54.5***	***51.8***	***56.0***	***68.2***	***70.6***	***58.9***	***53.2***	***52.7***
North America										
United States	53.2	53.6	55.4	54.4	64.8	76.4	68.9	46.9	40.3	35.3
Canada	1.4	1.6	1.7	1.5	1.6	1.8	1.6	1.1	1.0	0.9
Mexico	2.3	2.7	3.1	3.2	4.0	4.5	4.7	1.1	0.4	0.4
Total North America	***57.0***	***57.9***	***60.2***	***59.1***	***70.4***	***82.7***	***75.2***	***49.1***	***41.7***	***36.6***
Central & South America										
Brazil	1.0	1.0	1.0	1.1	1.5	2.5	2.5	2.0	1.9	2.3
Venezuela	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.4
Uruguay	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4
Other Countries	1.9	1.7	1.6	1.4	1.8	2.2	2.1	1.5	1.0	1.0
Total Central & South America	***3.4***	***3.2***	***3.0***	***2.9***	***3.9***	***5.5***	***5.4***	***4.2***	***3.6***	***4.1***
Asia										
Japan	26.0	25.7	23.7	21.3	20.9	23.0	21.3	20.0	19.6	17.4
China	20.4	22.5	22.7	25.3	29.2	31.9	30.9	30.1	26.7	16.1
S Korea	7.7	7.8	7.7	8.4	9.4	10.0	9.1	8.4	6.9	4.1
Taiwan	2.8	2.9	3.1	3.6	4.1	4.5	4.3	3.6	3.1	2.7
India	22.7	16.1	13.8	15.0	17.9	20.6	24.8	5.4	3.0	2.5
Thailand	2.6	2.7	2.9	3.1	3.7	3.7	3.2	2.8	2.2	2.0
Saudi Arabia	1.8	1.9	1.9	1.9	2.2	2.3	2.2	2.0	1.9	1.7
Israel	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.4
Singapore	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.4	0.4
Kazakhstan	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.3
Indonesia	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.3
Uzbekistan	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.3
Vietnam	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3
Hong Kong	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.2

TABLE 4 - SUPPLY OF SILVER FROM THE RECYCLING OF OLD SCRAP

(million ounces)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Other Countries	1.1	1.2	1.2	1.3	1.5	1.7	1.6	1.3	0.8	0.7
Total Asia	***87.8***	***83.4***	***79.5***	***82.3***	***92.0***	***100.8***	***100.3***	***76.3***	***66.5***	***49.4***
Africa										
Morocco	0.9	0.9	0.9	1.0	1.0	1.1	1.1	1.0	0.9	1.0
Egypt	1.5	1.5	1.7	1.8	2.0	0.9	0.8	0.7	0.6	0.6
Other Countries	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.6	0.6	0.6
Total Africa	***3.0***	***3.0***	***3.2***	***3.4***	***3.7***	***2.7***	***2.6***	***2.3***	***2.1***	***2.2***
Oceania										
Australia	1.7	1.7	1.6	1.6	1.6	1.6	1.4	1.3	1.2	1.1
Total Oceania	***1.7***	***1.7***	***1.6***	***1.6***	***1.6***	***1.6***	***1.4***	***1.3***	***1.2***	***1.1***
World	**207.1**	**204.2**	**202.0**	**201.2**	**227.5**	**261.5**	**255.5**	**192.1**	**168.3**	**146.1**

than for high-grade scrap volumes, but a smaller decline compared to 2014 for the segment. This decline was driven by lower silver content in e-waste sourced to recyclers. Feedstock volumes in gross weight terms increased last year, however years of aggressive thrifting activity among electronics manufacturers amid rising precious metals prices has continued to diminish recycling feedstock values. The United States is the largest generator of e-waste in the world, but scrap from e-waste recycling only accounts for a single-digit share of total scrap generated in the country.

In **India** scrap supply declined for a third consecutive year falling by 14% from 2014 to 2.5 Moz (79 t), the lowest in more than 15 years. This decline is largely attributed to three consecutive years of falls in annual average prices, which last year dropped by 14%. Volume from jewelry scrapping was insignificant to the extent that there was hardly any exchange of old jewelry for new. However, distress sales from marginal farmers were prevalent due to two consecutive years of below normal monsoon rainfall and it was not just in carat jewelry but also clothes with jari (silver thread).

Scrapping largely came from the industrial sector, mainly through extraction from catalysts and from the glass industry; these were largely processed by firms in the formal sector. Electrical contacts, x-ray films, plated items and electronics goods however still continue to be sources of supply in the informal market.

While the significantly weaker silver price played a key role in the annual decline across Asia, another contributor was a general decline in industrial activities, which in turn resulted in less silver (and other metals) recovered from this field. Indeed, with reduced end-user demand, a function of a weaker global economic environment, demand for replacement electronics was lower in several segments, which in turn limited recycling of old appliances. Scrap from **China** retreated 40% in 2015 to a level not seen since 2004. Chinese refiners were not keen on taking scrap silver to work with, as it did not make economic sense given how low the silver price was last year. The continual decline in domestic industrial activities, particularly in the fourth quarter, also resulted in less silver to recover. A sizable drop in industrial recycling was also chiefly to blame for the weaker scrap flows in **Taiwan** and **South Korea** where recoveries slipped by 12% and 41% respectively.

In **Japan**, scrap volumes are estimated to have fallen by 11% last year, reaching 17.4 Moz (542 t). This represents the lowest level since 1990, and was mainly due to the ongoing decline in scrap collected from the photographic industry and process scrap from the industrial sectors. One sector that has remained broadly constant has been X-ray scrap, which contains more silver than consumer film, as its availability is dependent not on price but on medical institutions having kept the stock for the required length of time stipulated by statutory obligations. In yen terms the price of silver declined 6% in 2015, a five-year low, with the weak price limiting the scrapping of old electronics by consumers and indeed across the supply chain, as fabrication volumes were also broadly weaker due to the struggling economy and softer export demand.

Turning to 2016, global silver scrap flows have picked up appreciably early in the year, buoyed by the marked increase in the silver price and underpinned by a stuttering global economy.

6. SILVER BULLION TRADE

- ***Silver bullion trade in 2015 continued to be dominated by flows to India, where total imports reached an all time high of 256.0 Moz (7,954 t). The decline in silver prices encouraged fabricators and investors to build inventories.***

- ***United States bullion imports reached a record high last year, reflecting the strong increase in retail investment, as well as a recovery in flows from Latin America due to increased mine production.***

- ***Switzerland continued to lose out in its importance as the global silver trading center last year, recording another year of trading deficits. Many exporters redirected their silver shipments to other countries instead.***

- ***Silver bullion imports to China increased significantly in 2015, especially the second half of the year. While the country's industrial segment remained soft, the depreciation of the yuan in August provided arbitrage trading opportunities***.

EUROPE

Europe (excluding Russia) is traditionally one of the world's main deficit regions as fabrication demand exceeds mine supply and locally generated scrap. Fabrication of industrial items, jewelry, silverware and coins rose by 4% to 132.2 Moz (4,111 t), while scrap supply fell by a marginal 1% and mine supply rose by 7%, to a total of 69.9 Moz (2,174 t). Therefore, Europe's fundamental deficit increased from 18.8 Moz (584 t) in 2014 to 19.6 Moz (608 t) last year.

Although this deficit rose by 4% year-on-year, it was still less marked than in 2013.

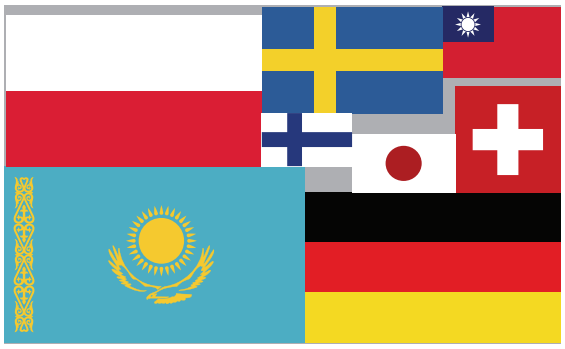
In 2015, **UK** official exports of bullion increased by 13% to 120.5 Moz (3,747 t). India remained the dominant export partner, fueled by a 9% increase year-on-year to the highest level since 2008. Shipments to that country in 2015 represent 83% of all the silver exported from Britain, boosted by strong Indian demand with the largest volumes being shipped in March and September.

UK bullion imports registered an 18% fall to 120.6 Moz (3,752 t), with most of the bullion coming from Kazakhstan, Sweden, Germany, Switzerland and Poland. Much of this fall came from the drop in flows in April and August.

Swiss silver bullion imports in 2015 dropped by 42% to 20.0 Moz (626 t), the lowest level since 1982, the first year for which we have data available. Despite this, exports only dropped fractionally to 66.5 Moz (2,069 t), leaving a 46.5 Moz (1,446 t) deficit. This points to strategic changes in global silver flows as well as acceleration in the decline in the large stocks of silver held in Switzerland. From a longer-term perspective it's possible to see that the trade deficits of the last two years are important, but that the stock build from 2005-2012 and during the 1980s help to buffer the alpine country from radical declines in imports.

Switzerland not only lost out from the complete cessation of flows from certain countries but saw marked declines from most major countries. Belgium redirected some of its

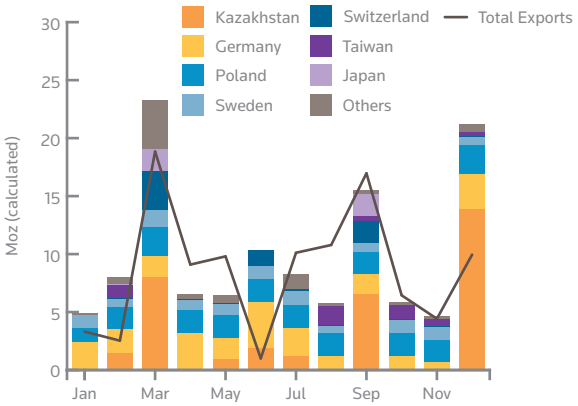
2015 UNITED KINGDOM BULLION IMPORTS



120.6 Moz (3,752 t)

Source: GFMS, Thomson Reuters; HMRC

2015 MONTHLY UNITED KINGDOM BULLION IMPORTS



Source: GFMS, Thomson Reuters; HMRC

silver bullion towards Brazil, Italy and the United States while Italian imports more than doubled, but were still down 24% compared to 2013. Much of the decline in Italian exports in 2014 was made up by movements to Germany; these largely dried up in 2015, leading to a resumption of previous movements.

Despite an increase in Argentine and Bolivian silver mine production, over the last two years exports have switched from Switzerland to the United States. A reason for this is likely to be competition with United States refiners seeking higher market share. Exports to Switzerland from the major silver mining country Kazakhstan ceased in 2015. This abrupt change in flows at the end of a calendar year was mirrored at the end of 2013 when Kazakhstan ceased exporting to Hong Kong and South Korea. The silver instead flowed to the UK, which captured over 99% of the market share of Kazakh exported silver bullion, according to Kazakh trade statistics.

Though on the surface Swiss total exports may seem to be stable when compared to 2014, this belies great changes in the underlying dynamic of trade in that country. Movements to India more than tripled, with March alone seeing 7.6 Moz (240 t), or 42% of the annual total, being shipped to the country from Switzerland. For the past few years, the traditional route of Swiss silver going to India would be via the UK, in particular vaults in London, but this seems to have tailed off, with the metal going direct to India. The vast majority of Swiss silver that is exported to the UAE and Nepal is bound for India ultimately.

Official **German** figures showed that bullion imports decreased by 17% in 2015 (to around 19 Moz (590 t)), after two years of growth. Sweden returned to being the largest supplier at 4.7 Moz (146 t). Shipments from Argentina recorded a 51% rise which was likely to be doré. Imports from Poland fell by 22% countered by Austria and the Czech Republic with imports rising by 143% and 100% respectively.

Germany's exports showed an 11% decrease to 45.7 Moz (1,422 t) last year. Almost half of the bullion went to the UK, although exports to this market were down 21% compared to 2014. The bulk of the remainder went to Austria where demand for silver coins and bars was strong last year. At 3% of total exports, Estonia posted a considerable rise in 2015 following a massive surge in 2014 after Ukraine crisis sanctions were imposed against Russia. Other countries that took up considerable silver bullion from Germany last year were the United States, Switzerland and France.

Following two successive years of growth, silver bullion imports into Italy fell by 18% in 2015, to 21.7 Moz (675 t), back to levels seen in 2013. Germany remained the largest exporter, although its share of Italy's total silver imports dropped substantially last year, to 37% from nearly 60% a year earlier. On the other hand, Swiss share increased to 17% last year, from 12% in 2014. Meanwhile, Italy's silver exports declined by 26%, to 9.7 Moz (301 t), with losses to most key export destinations. That said, shipments to Switzerland rose sharply last year, to account for nearly half of total exports, as opposed to just 10% a year earlier.

Russian silver bullion exports rose by 17% in 2015, to 29.3 Moz (912 t), largely driven by India, as shipments recorded to that destination increased by 23%. Meanwhile, silver bullion imports dropped by a sharp 63%, triggered by

2014 SWISS SILVER EXPORTS

68 Moz (2,116 t)

Source: GFMS, Thomson Reuters; Swiss Impex

2015 SWISS SILVER EXPORTS

66.5 Moz (2,069 t)

Source: GFMS, Thomson Reuters; Swiss Impex

the 61% decline in shipments from Italy, which accounted for 89% of the Russian total silver imports.

THE AMERICAS

The **United States** imported a record high of 223.5 Moz (6,952 t) of silver bullion and doré in 2015, a 22% increase over the previous year. This double-digit rise follows a 4% contraction in 2014. The increase was driven by a recovery in flows from Latin America and Canada. Imports from Latin America increased 9% last year, amounting to 137.0 Moz (4,263 t) and accounting for 61% of total imports. This recovery was driven by import growth from Peru (75%), Argentina (136%), Bolivia (34%), and Guatemala (875%). These remarkable increases follow years of declines caused by elevated concerns about potential exposure to money laundering and illegal mining activities. With regard to Peru, the export ban put in place on illegally mined gold in late 2013 resulted in a 13% drop in U.S. silver imports from the country in 2014, but flows have since resumed in 2015, largely because of an 11% jump in mine production. To a lesser extent, U.S. refiners also have recouped some market share of the Latin American doré market from Indian refiners, who offer competitive price terms.

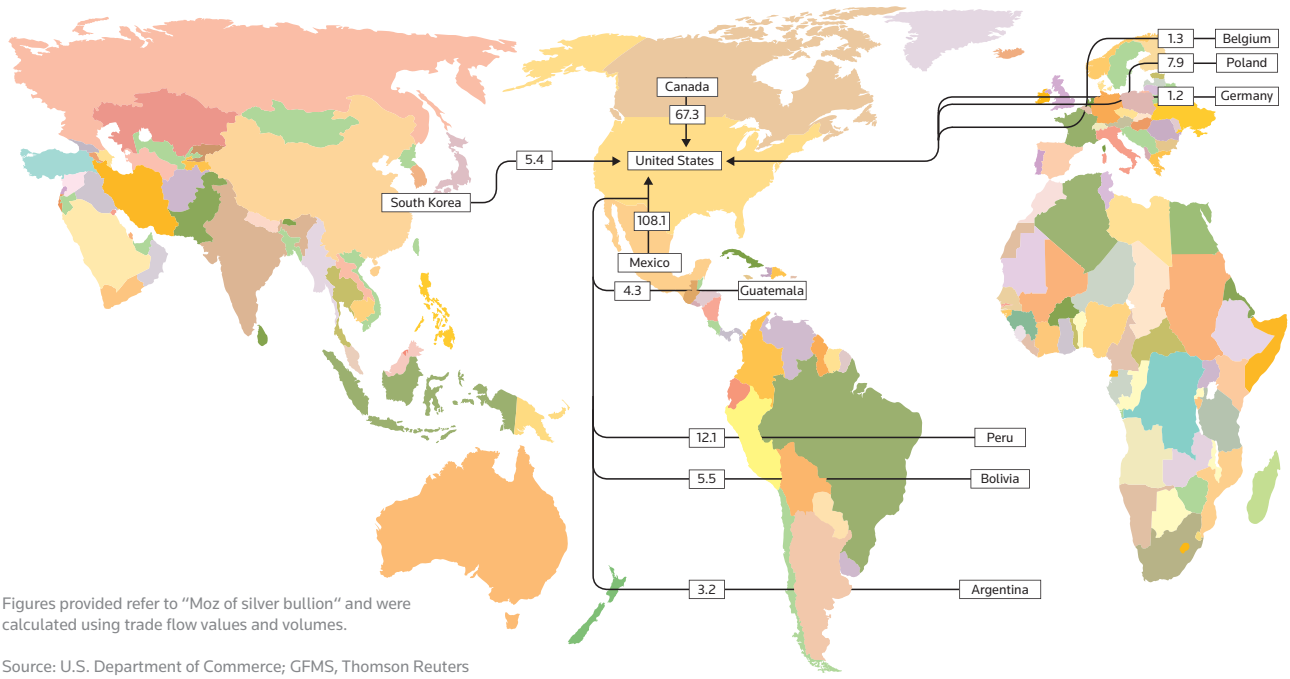
In contrast to the double-digit growth in imports from many of the Latin American partner countries, imports from Mexico fell to 108.1 Moz (3,362 t), down 3% last year. This drop is largely owed to a slowdown in mine production growth in the country coupled with increased domestic refining activities. Mexico exported 112.7 Moz (3,505 t) of silver last year, down 4% from the previous year and marking the third consecutive decline in export volumes.

U.S. imports from Canada increased by 68% to reach 67.3 Moz (2,094 t) last year. Much of this increase is owed to strong retail investment in the United States, which buoyed demand for coin, rounds, and bar products made in Canada. Canada exports nearly all of its silver bullion and doré to the United States.

MIDDLE EAST AND INDIAN SUB-CONTINENT

United Arab Emirates's (UAE) market size in silver trade is estimated to be approximately 5.8 Moz (180 t). A large part of this supply originates as secondary metal refined from copper concentrates and the rest is byproduct from refining gold doré within UAE. The region was previously an important hub for shipping silver of Russian and UK origin to India. However, with large volumes of shipments to India sent by sea from 2014, UK's exports to UAE declined from 1.4 Moz (42 t) in 2013 to just 0.2 Moz (6 t) last year, while Russian exports to UAE dropped from 5.1 Moz (160 t) to just 1.2 Moz (36 t) for same time period.

MAJOR TRADE FLOWS IN SILVER BULLION TO THE UNITED STATES IN 2015



Figures provided refer to "Moz of silver bullion" and were calculated using trade flow values and volumes.

Source: U.S. Department of Commerce; GFMS, Thomson Reuters

Turkey continued to see substantial silver bullion inflows in 2015. We estimate bullion imports (a combination of fine silver, scrap, and mined doré) reached 9.2 Moz (286 t), a year-on-year increase of 9%. Imports were dominated by flows from Switzerland, representing 62% of the total, with volumes rising a considerable 72% to 5.7 Moz (176 t). Inflows were also boosted by a material rise in supply from, Morocco, Poland and Hong Kong. Exports also rose, by 31%, to an estimated 3.8 Moz (119 t) last year. Direct shipments to Nepal, Singapore and Italy saw a considerable year-on-year increase, accounting for 69% of total exports. Shipments to India recorded another decline, which, however, may well be routed through Nepal.

Indian silver bullion imports reached a new record high of 256.0 Moz (7,954 t), rising by 16% from the 2014 level. The 13% year-on-year decline in the average domestic silver price motivated fabricators and investors to build inventories. Taking a look at the silver imports on a monthly basis, volumes were highest in March at 34 Moz (1,041 t), and for rest of the year averaged 20 Moz (628 t). Also important to note is the source of supply of fine silver obtained from doré, imported concentrates, and silver refined from lead mining. Supply from the first two combined is estimated at 4.6 Moz (143 t) and from domestically mined as a secondary metal was 12 Moz (374 t).

Last year 26 firms imported silver compared to 33 in 2014 and 78% of the consignments were delivered by ship as compared to 60% in 2014. Banks had the lion's share of supply to the domestic market, and it required only six banks to capture a market share of 57% followed by five government nominated agencies taking a share of 22%, seven private agencies with 20% with the remaining one percent imported duty free for export purposes by a bank, fabricators of industrial products (five), and jewelry exporters (three). Taking a look at international suppliers, it took 18 suppliers, which include banks, refiners and trading houses, to supply the 256 Moz (7,954 t) last year. Out of this it took only the top five suppliers, which were all banks, to capture a market share of approximately 80%.

Taking a look at regional delivery for end consumption, supplies were the highest to Ahmedabad with a 37% market share, followed by Delhi and Agra together at 24%, and Chennai in third position at 16%. It was interesting to note the rise in share of Chennai as a landing port, with its market share rising from 10% in 2014 to 25% last year, while Delhi fell from 28% to 13% for same period; this change attributed to increased shipments by sea which later gets delivered to consumption centers by road and rail.

Supplies originated from 30 countries but from 49 different ports worldwide. The countries of origin for 80% of the total were United Kingdom, Switzerland, China, Russia, South Korea, Hong Kong and Taiwan with the UK shipping 31% of the total respectively.

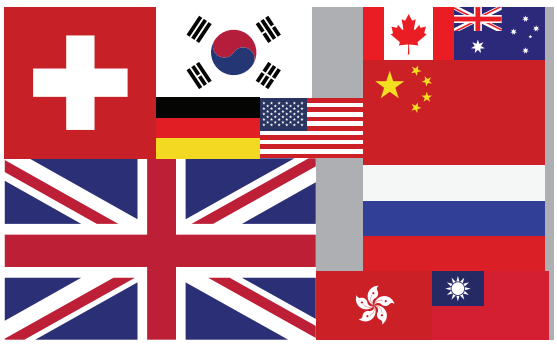
INDIAN BULLION IMPORTS

Moz	2011	2012	2013	2014	2015
Total Imports	**132.4**	**61.8**	**187.1**	**220.0**	**255.7**
Spot Price/kilogram	55,505	57,085	49,331	42,374	36,500

** Includes duty free and duty paid imports

Source: GFMS, Thomson Reuters; Indian Ministry of Commerce

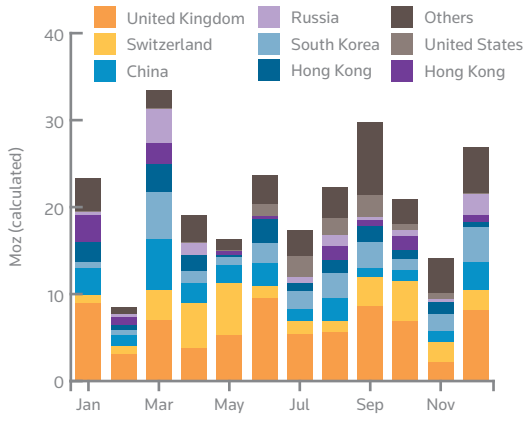
2015 INDIAN SILVER IMPORTS



256 Moz (7,954 t)

Source: GFMS, Thomson Reuters; Indian Ministry of Commerce

2015 MONTHLY INDIAN SILVER IMPORTS



Source: GFMS, Thomson Reuters; Indian Ministry of Commerce

EAST ASIA

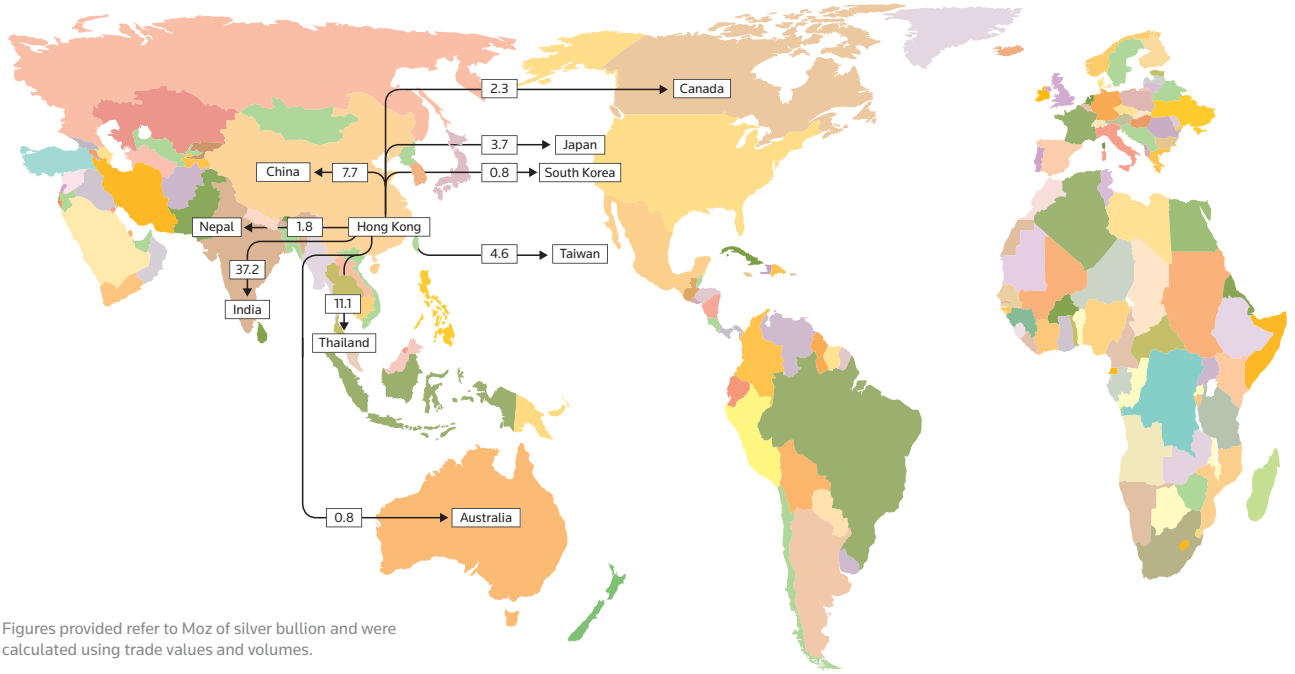
The imports of silver to **China** discussed here consist of metal inflows derived from base metal concentrates as well as the import of silver in bullion form. Base metal concentrates imports declined marginally last year, easing by 2% to 242 Moz (7,515 t) of contained silver. The contraction of imports after several years of healthy gains reflected the country's slowing economy. Imports of silver bullion, however, rose substantially, by close to 300% to a calculated volume of approximately 28.1 Moz (873 t). Imports from Hong Kong and China's Free Trade Zone increased markedly, rising 20% and 79% respectively, and when combined, contributed 77% of total silver bullion imports last year. For strategic reasons, including propelling Shanghai's status into an important global hub, imports from China's Free Trade Zone should continue to increase, and may become the dominant source in the near future. Shipments from Australia and Switzerland, China's two largest sources of silver bullion in 2014, took a backseat last year to become the third and fourth largest contributors, though in volume terms supply from these markets still grew 17% and 7% respectively.

Looking at bullion exports, after a modest 3% decline in 2014, Chinese silver bullion outflows increased 50% last year, to 66 Moz (2,054 t), which was somewhat in line with the growth in silver imports. Hong Kong was easily the largest destination, receiving 99.5% of total exports from the mainland. For comparison purposes, previous export volumes, particularly between 2006 and 2009, exceeded 128.6 Moz (4,000 t).

Due to the Value Added Tax (VAT) structure in China, various parties have tried to exploit loopholes, aiming to profit from arbitrage opportunities. While the Chinese silver price quoted on local exchanges is always trading at higher levels compared to the international benchmark, the local silver price is inclusive of 17% VAT. Without the VAT, the Chinese silver price is actually lower than the international quotation. As a result, this has encouraged smuggling activities, and other practices to take advantage of the price differential and this would be reflected in the official imports and exports statistics.

We believe one of the reasons why the imports and exports of silver bullion increased last year may be due to the arbitrage opportunities presented last year between the onshore and offshore yuan exchange rates, particularly during the second half of the year. After the Chinese government officially depreciated the yuan currency in August, the fluctuation between the CNY and the CNH rates increased immediately, with the cross rate as high as 1.0174 in September, compared to the daily average of

MAJOR TRADE FLOWS IN SILVER BULLION FROM HONG KONG IN 2015



Figures provided refer to Moz of silver bullion and were calculated using trade values and volumes.

Source: Hong Kong Census & Statistics Department; GFMS, Thomson Reuters

0.9996 in 2014. For example, traders may pay an exchange rate against the dollar of 6.5 to import the bullion into the country. They then can smuggle the same bullion out of the country, selling it to receive dollars. As the offshore yuan exchange rate is usually lower than the onshore rate, they then sell the dollars for yuan, say at an exchange rate at 6.6, and thus making the difference between the two rates.

Based on official trade statistics, silver bullion imports into **Hong Kong** decreased 35% to an estimated 27.0 Moz (839 t) in 2015. China regained its position as Hong Kong's largest silver bullion supplier, with shipments equivalent to 18.7 Moz (583 t), while South Korea saw its shipments decreased 83% last year to 3.8 Moz (118 t). Meanwhile, exports fell 49% last year, to 74.3 Moz (2,312 t). India, which dominates market share at 52% of the total, saw deliveries slump 53% last year, to 38.9 Moz (1,208 t).

Taiwan's total silver bullion imports fell 84% last year, to an estimated 4.9 Moz (152 t). While China remained Taiwan's biggest silver supplier, its market share dropped from 83% to 66% in 2015, with total shipments of 32.2 Moz (100 t). On the other hand, Taiwan's silver exports fell 48% to 0.3 Moz (9 t). Exports to Hong Kong and Indonesia declined dramatically while shipments to Switzerland and South Africa both rose. The slowdown of the global industrial sector had a negative impact on Taiwan's consumption of silver last year.

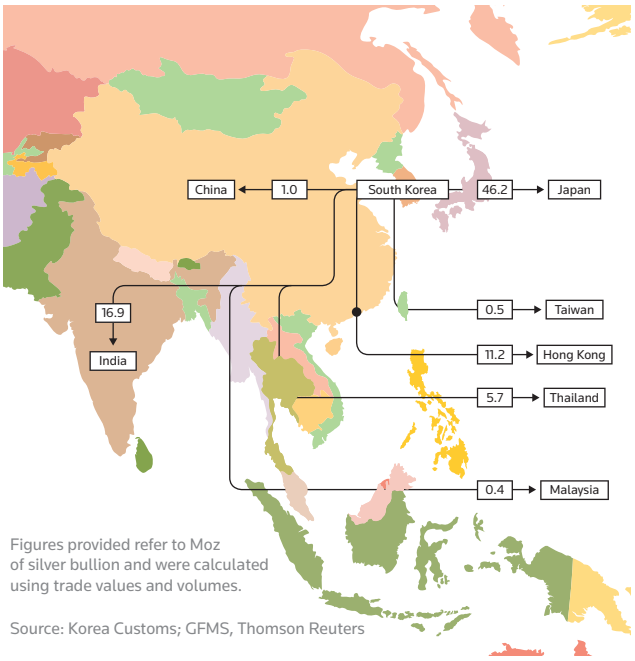
Singapore's imports rose 21% to 4.7 Moz (147 t) last year. Indonesia remained the dominant supplier, contributing 72% of Singapore's total silver imports. Meanwhile, Singapore's silver exports also increased 56% to 4.5 Moz (141 t), with shipments to Thailand surging over 380% to 3.1 Moz (96 t), increasing its market share from 22% in 2014 to 68% last year. Shipments to India and Malaysia posted notable declines.

South Korea's silver imports decreased 21% to 1 Moz (31 t) last year, with China being the dominant supplier, taking up approximately 94% market share. On the other hand, the country's silver exports, driven by its refining industry, retreated 9% to 82.7 Moz (2,572 t). The slowdown of industrial demand in several key markets, coupled with competition due to currency depreciation from neighboring countries, added to the weakness. Moreover, silver demand from the domestic electronics sector decreased 25% last year.

Silver bullion imports into **Japan** dropped a modest 4% last year, to 50.2 Moz (1,560 t), with lower shipments from South Korea, Mexico, China and the United States driving imports lower. South Korea remained Japan's dominant silver supplier, increasing its market share from 90% to 93% in 2015. Japan's silver exports more than doubled last year, to an estimated 1.7 Moz (54 t). Shipments to India rose significantly, taking over a third of Japan's total silver exports.

Our analysis suggests that imports of silver bullion to **Thailand** enjoyed a healthy rise in 2015 to an estimated 29.9 Moz (930 t). This represents the highest level in five years and comes on the back of a return to stronger jewelry fabrication volumes. This growth was led primarily by a stronger jewelry export market as domestic demand remained moribund due to weak economic performance. Imports from Hong Kong and China again dominated supply, at close to 50% of the total, with direct shipments from the former providing the bulk of supply and enjoying a 20% year-on-year increase. Imports from Switzerland remained the next largest source of supply enjoying a 64% increase over 2014 volumes to reach to 8.3 Moz (259 t), while shipments from Indonesia were also significantly stronger. Turning briefly to exports, reported bullion exports were down marginally last year, retreating by 9%, with India easily the largest market at 64% of the total.

MAJOR TRADE FLOWS IN BULLION FROM SOUTH KOREA IN 2015



Figures provided refer to Moz of silver bullion and were calculated using trade values and volumes.

Source: Korea Customs; GFMS, Thomson Reuters

7. INDUSTRIAL FABRICATION

- ***World industrial fabrication totaled 588.7 Moz (18,311 t) in 2015, a 4% decline from the previous year. Weakened fabrication demand in developing countries outweighed almost non-existent growth in developed countries.***

- ***Photovoltaic (PV) demand for silver totaled 77.6 Moz (2,415 t) in 2015, a 23% surge from the previous year. This marks the second consecutive year of increases in this sector, driven by a recovery in growth from all three primary markets after years of excess capacity, while growth was particularly strong for Chinese solar panel installations.***

- ***Brazing alloy and solder silver fabrication declined in 2015, by 5.0 Moz (155 t). The fall in demand was dominated by weakness stemming from China, the largest source of demand in this sector.***

- ***Demand for silver from the ethylene oxide (EO) industry soared last year, to more than double to total 10.2 Moz (317 t), the highest level of demand on record. Over two thirds of the demand growth was accounted for by China.***

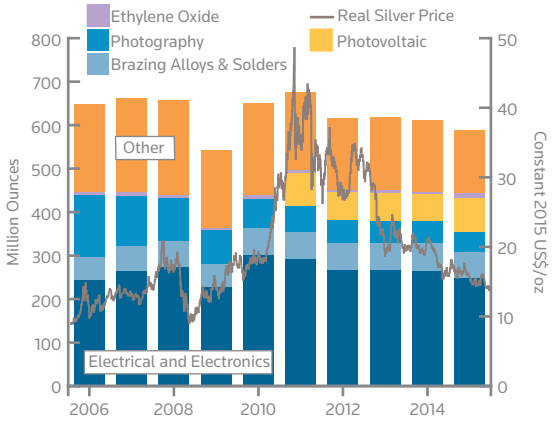
- ***Declines in demand from electronics, photography, brazing alloys and solders and other miscellaneous applications amounted to 42.2 Moz (1,312 t), which outweighed the 19.7 Moz (612 t) increase in PV and EO demand.***

Industrial manufacturers used 588.7 Moz (18,311 t) of silver in 2015, down 4% or 23 Moz (700 t) from a year ago. Increases in photovoltaic and ethylene oxide (EO) demand were largely offset by lower demand for silver in electronics and electrical components, photographic papers, brazing alloys and solders and other miscellaneous applications. While Japan and the United States recorded modest increases in demand of 3% and 2% respectively, sizable decreases in demand from China, Africa, South America, and to a lesser degree Europe, outweighed this growth.

Industrial silver fabrication is heavily influenced by economic and industrial production growth. The global economy expanded by 2.4% in 2015, similar to growth posted in the previous three years. While industrial production expanded by an estimated 1.9% in 2015, the weakest annual rate since 2009, a year in which global industry shrank. Based on data going back to 1990, there is a very strong positive (0.88) correlation between the growth in silver industrial fabrication and industrial production; therefore it is not surprising to record that silver fabrication weakened in 2015. However, the outright decline in demand of 4% is perhaps better explained when looking at other factors, such as the slowdown in the Chinese economy, in addition to ongoing thrifting.

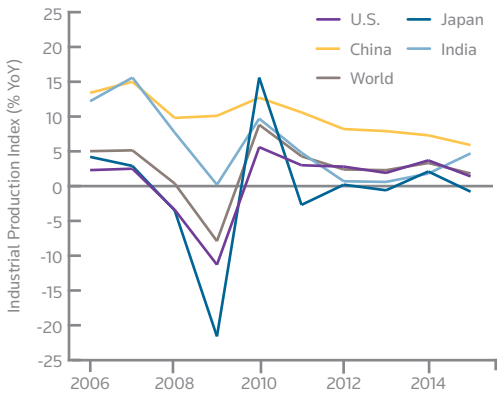
Focusing on China, its industrial production was recorded at 6% for 2015; this marks an 18% decline in growth from the previous year, with the country recording its lowest annual growth rate since 2000. This significant slowdown in the Chinese economy in 2015 has greatly affected domestic and international demand, with Chinese silver industrial demand declining by 9% over the period to

INDUSTRIAL SILVER FABRICATION (BY CATEGORY)



Note: Photovoltaic in "Other" category prior to 2011
Source: GFMS, Thomson Reuters

INDUSTRIAL PRODUCTION IN KEY SILVER-USING COUNTRIES



Source: GFMS, Thomson Reuters; Oxford Economics

TABLE 5 - SILVER FABRICATION: INDUSTRIAL APPLICATIONS (INCLUDING THE USE OF SCRAP)

(million ounces)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Europe										
Germany	26.1	27.6	27.4	20.3	26.5	25.4	21.7	21.3	20.9	20.9
United Kingdom	30.8	23.8	22.0	17.7	20.6	20.8	19.0	17.9	17.6	17.5
Russian Federation	21.7	22.2	21.9	18.7	20.3	19.4	19.1	19.2	18.2	16.6
Belgium	29.6	27.7	24.4	19.4	18.3	16.4	15.4	14.3	14.2	14.0
Italy	10.9	11.3	11.2	9.0	9.9	9.2	8.6	8.4	8.4	8.1
France	10.4	10.7	10.8	7.5	8.8	8.0	7.2	7.0	6.8	6.9
Czech Republic	2.1	2.4	2.7	2.1	2.4	2.6	2.8	3.0	3.1	3.1
Switzerland	2.5	2.5	2.5	2.2	2.4	2.4	2.3	2.3	2.3	2.3
Turkey	1.6	1.6	1.6	1.3	1.4	1.5	1.4	1.5	1.5	1.6
Netherlands	1.6	1.6	1.6	1.3	1.5	1.5	1.4	1.4	1.4	1.4
Spain	1.9	1.9	1.9	1.7	1.8	1.4	1.2	1.1	1.1	1.2
Poland	0.7	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.8
Austria	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Norway	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	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
Romania	0.4	0.2	0.2	-0.1	0.2	0.2	0.2	0.2	0.2	0.2
Hungary	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Portugal	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Slovakia	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Other Countries	0.4	0.4	0.4	0.2	0.2	0.3	0.3	0.3	0.3	0.3
Total Europe	**142.3**	**136.3**	**131.0**	**103.3**	**116.4**	**111.2**	**102.7**	**100.1**	**98.3**	**96.1**
North America										
United States	153.2	149.0	149.5	124.4	151.2	166.4	132.7	127.4	123.8	126.7
Mexico	3.1	3.3	3.1	3.1	4.8	6.0	6.6	6.6	6.7	7.9
Canada	1.7	2.7	2.4	1.3	1.9	1.8	1.8	1.9	1.8	1.8
Total North America	**158.0**	**155.0**	**155.0**	**128.8**	**157.9**	**174.2**	**141.1**	**135.9**	**132.3**	**136.3**
Central & South America										
Brazil	2.9	5.4	5.2	4.6	5.7	5.4	5.3	4.7	4.5	4.1
Argentina	1.5	1.4	1.0	0.8	0.9	0.9	0.9	0.9	0.8	0.8
Colombia	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.6	0.6
Other Countries	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total C. & S. America	**5.1**	**7.4**	**6.8**	**5.9**	**7.2**	**6.9**	**6.8**	**6.3**	**6.4**	**5.9**
Asia										
China	111.1	127.7	145.5	136.7	156.8	164.1	165.4	179.7	186.1	168.9
Japan	129.7	123.6	102.9	65.2	93.9	100.7	90.4	92.5	88.5	91.3
India	44.0	46.8	47.8	45.5	50.6	53.9	49.9	47.2	44.1	40.4
South Korea	22.3	24.1	25.9	19.7	24.5	24.5	23.6	22.3	20.4	15.4
Taiwan	13.6	16.7	16.6	12.3	15.1	15.8	14.3	14.6	15.1	14.5
Hong Kong	6.7	7.1	6.9	5.5	6.4	6.4	6.2	5.8	4.9	4.4
Iran	2.7	2.7	3.4	1.8	1.9	1.8	1.8	1.7	1.8	1.8
Singapore	0.0	0.0	0.0	0.1	1.8	1.9	0.5	0.7	0.8	1.6
Kazakhstan	1.8	1.9	1.9	1.6	1.8	1.7	1.7	1.7	1.7	1.5
Uzbekistan	1.8	1.9	1.9	1.6	1.8	1.7	1.7	1.7	1.7	1.5
Thailand	0.9	0.9	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Indonesia	0.6	0.6	0.6	0.5	0.8	0.8	0.9	0.8	0.9	0.9
Other Countries	3.2	3.2	4.3	8.4	7.6	4.9	2.3	2.3	2.5	2.5
Total Asia	**337.7**	**356.5**	**358.2**	**299.4**	**363.2**	**378.4**	**358.8**	**371.3**	**368.6**	**344.9**

TABLE 5 - SILVER FABRICATION: INDUSTRIAL APPLICATIONS (INCLUDING THE USE OF SCRAP)

(million ounces)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Oceania										
Australia	5.1	5.0	5.1	4.5	4.9	5.0	5.0	4.8	5.0	4.8
Africa										
Morocco	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	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	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total Africa	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**
World Total	**648.9**	**661.0**	**656.8**	**542.6**	**650.3**	**676.3**	**615.0**	**619.1**	**611.2**	**588.7**

168.9 Moz (5,252 t), marking the first annual decline in domestic demand since 2009 and the lowest level since 2012. Meanwhile, the reduction in silver per unit, referred to as 'thrifting', remains a key driver in limiting demand growth in this industry; however it is certainly not as significant a driver as in recent years. For example, the average reduction to silver per solar cell in 2015 was 9%, a stark contrast to five years ago when it was measured at 20%.

Ethylene oxide (EO) demand was a bright spot within industrial demand, expanding by an impressive 106% last year, to total the highest annual demand level on record. Solar demand provided further support, rising by 23%, with solar demand now contributing 13% of total industrial fabrication, a material increase compared with 1% a decade ago.

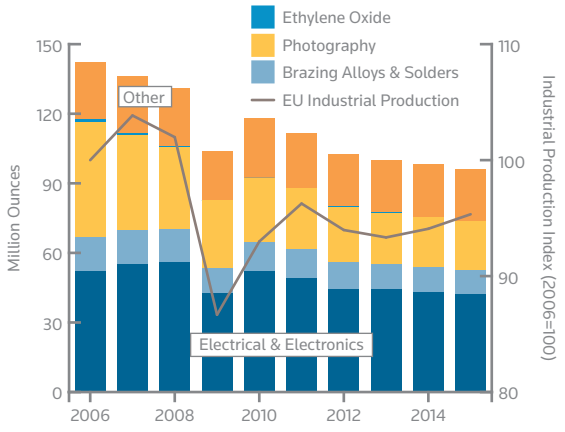
The photography sector continued its chronic decline in silver demand for photographic papers. The 4% drop, however, was the slowest rate of decline since 2002. While silver demand in electrical applications recorded its fourth successive year of decline, returning to demand levels last recorded in 2009. Demand for brazing alloys and solders also fell in 2015, by 8%.

EUROPE

European silver industrial demand fell by 2% last year to 96.1 Moz (2,990 t), posting a fifth consecutive annual fall. The drop was somewhat slower than in previous years, which was mainly due to a rise in the number of silver-containing items, lifting demand, but countered by a continuation in thrifting, which consequently pushed net fabrication down. In addition, just like gold, silver has been subject to substitution pressures, replacing it with copper and copper/aluminium alloys in the case of silver based coatings. The continuous thrifting and substitution in various applications is in our view approaching a threshold level, as many other metals simply don't share the same characteristics as silver, in turn reducing manufacturers' ability to thrift further without significantly compromising the functionality of the applications. Fabrication of electronics, photography and other miscellaneous applications fell last year by 2%, but on the positive side an increase in growth was recorded for brazing alloys and EO of 1% and 2% respectively.

Silver industrial fabrication in **Germany** remained flat last year at 20.9 Moz (651 t). Silver is used in a variety of applications such as light switches, brazing and alloys and as part of several other miniaturized products in the automotive industry. Silver-based brazing alloys and solders find a wide adoption in the so-called heating, ventilation, air conditioning and refrigeration (HVACR) applications. Demand for these household appliances is big business in China, but in Germany increasingly not the

EUROPE INDUSTRIAL FABRICATION



Source: GFMS,Thomson Reuters; Oxford Economics

case, particularly with regard to applications that contain silver-based solders and brazing. This is mainly a function of substitution into other metals such as copper and zinc but also due to slower economic growth and consumer spending on appliances compared to some developing countries. In addition, and on top of various base metals, plastics are being used in a broader array of applications, also in some cases supplanting silver. Therefore, despite the absence of significant pressures to reduce costs due to the lower silver price, thrifting and substitution continue to persist with each new generation of products.

The 2% decline year-on-year in European photographic fabrication was the slowest decrease in thirteen years. **Belgium** is the largest user of silver in photographic applications within Europe and demand fell 1% in the country last year.

Italian industrial fabrication also recorded a 4% drop reaching 8.1 Moz last year (250 t). The continued weakness in the market was driven by a struggling underlying macroeconomic environment that restricts the country from emerging from its structural decline since 2007. Competition from other cheaper manufacturing regions, such as the Far East, has also intensified. Industrial fabrication from **Russia** suffered an even bigger blow with volumes declining 9% to 16.6 Moz (515 t) last year, as the economy remained mired in recession.

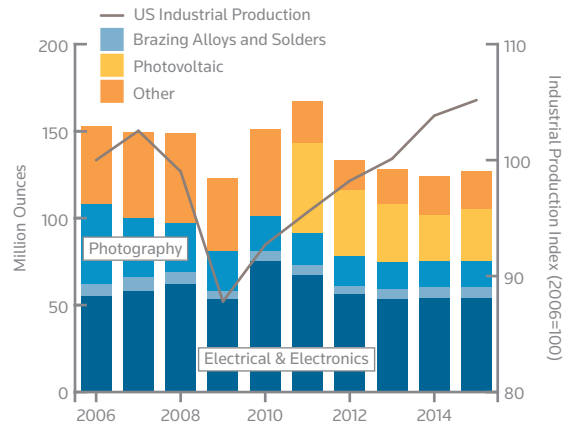
NORTH AMERICA

United States industrial silver fabrication increased to 126.7 Moz (3,940 t) in 2015, up 2% from the previous year. This increase followed three consecutive annual decreases in demand. Higher demand from the solar and ethylene oxide industries accounted for most of the increase last year, while reduced demand from the photography industry and other applications curbed demand growth.

The largest source of industrial demand for silver in the U.S. comes from the electronics sector, which made up 43% of the total in 2015. Demand from this sector peaked in 2010 at 74.6 Moz (2,320 t), but has been mostly flat over the past three years. Electronics demand had been rising at a rapid pace up to 2010, having increased at a compound annual growth rate of 9% from 2001 to 2009. This trend broke down thereafter, however, largely due to a decline in computer production. Global computer shipments peaked in 2011 and were almost 30% below that peak last year. Production is expected to continue to decline over the next two to three years. Consequently, electronics demand for silver is down by almost 30% from 2010. Demand for this source totaled 53.9 Moz (1,677 t) last year, a modest 0.3% increase over 2014. The gain occurred mostly in the second half of the year, as printed circuit board shipments increased. Demand was also bolstered by healthy auto demand, which helped to offset declines elsewhere.

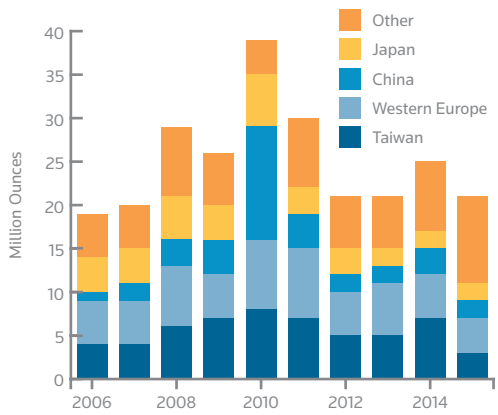
The second largest source of industrial fabrication, accounting for 24% of the total, is silver powder produced for the photovoltaics industry. Silver powder production totaled 30.2 Moz (941 t) last year, up 11% from the previous year. This increase follows three years of double-digit declines mainly due to market share losses to Japanese and to a lesser extent Chinese powder producers. Last year's increase, although market share losses curbed growth, was

US INDUSTRIAL FABRICATION



Note: Photovoltaic in "Other" category prior to 2011
Source: GFMS, Thomson Reuters; Oxford Economics

US SILVER POWDER EXPORTS



Source: U.S. Dept of Commerce; GFMS, Thomson Reuters

driven by higher solar panel installations globally, which boosted total industry demand for silver.

Most silver powder produced for solar and other electrical applications in the United States is shipped to Taiwan, South Korea, and China, where paste is made and subsequently fabricated into electrical components. Exports to these destinations dropped 23%, 3% and 22%, respectively in 2015. The relatively smaller decline in exports to South Korea reflects the dominance of powder demand for solar applications. The United States ships powder to large paste makers and solar cell fabricators in South Korea.

Silver usage in photography slipped 3.5% last year to total 14.8 Moz (459 t). Trends in this industry are discussed in greater depth in the photography section of this chapter. Photography accounted for 12% of total industrial demand in the U.S. last year, down from a peak of 45% in 2001.

Silver use in brazing alloys and solders rose by 2.6% in 2015, hitting its highest level since 2011 of 6.0 Moz (187 t). This rise was driven by an increase in the number of houses being built. Housing starts rose by 10.7% last year, a larger increase than the 7.8% in 2014.

Silver demand from the ethylene oxide industry rose to 0.4 Moz (13 t), up almost threefold from the previous year. Crucial for this was one new ethylene oxide plant commissioned in the United States last year, which required a newly fabricated silver catalyst. The balance of industrial fabrication totaled 21.4 Moz (664 t), which was a modest drop of 1% from the 2015 level. Other applications include antimicrobial, decorative items, medical and dental, batteries and many others. Demand for decorative items was particularly weak, as the strengthening U.S. dollar weighed on demand from tourists.

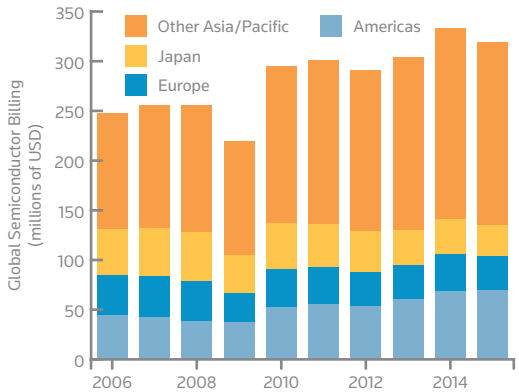
EAST ASIA

Chinese silver industrial demand dropped 9% in 2015, to 168.9 Moz (5,252 t). It was the first annual decline since 2009, and the lowest level since 2012. Although China's GDP grew at 6.9% in 2015 based on official figures, the true impact on the ground failed to reflect this robust performance, particularly in the manufacturing sector. The official manufacturing PMI, which tracks manufacturing activities of the larger sized enterprises in China, saw monthly ratings below 50 recorded in seven months throughout 2015; meanwhile the Caixin manufacturing PMI, which tracks orders of the more middle and smaller sized companies, displayed an even more worrisome picture, with monthly readings below 50 for 11 months last year. Both readings were implying the listlessness of the country's manufacturing sector, and hence affected its demand for industrial metals including silver. According to official statistics, total electricity consumed by the manufacturing sector as a whole recorded a year-on-year decline in 2015, showing a drop in industrial activity.

Indeed, traditionally factories usually would let their labor force go back to their hometowns for the Spring festival just prior to the holiday (usually late January or early February). Last year, however, some factories were already closed down and let go of their labor in December, showing the lack of orders and some factories were closing down early to minimize costs. The manufacturing PMI readings for the first two months this year were suggesting the contraction of the industry continued, though the readings in March suggested the industry may have stabilized.

While the electrical and electronics sector remained the largest area of silver industry demand, silver use from this sector declined 10% last year, to 69.9 Moz (2,173 t). A slowdown in growth in the global economy that resulted in softer demand for electronics products, and a migration wave that saw some companies reallocating their manufacturing base to the cheaper regions (mostly Southeast Asia), have all negatively impacted the country's demand for the white metal.

GLOBAL SEMI-CONDUCTOR BILLINGS



Source: SIA

In addition, the domestic property market continued to suffer from an overhang of inventories, particularly in the third and fourth tier cities, with total commercial properties available for sale throughout the country totaling 719 million square meters at the end of last year, reaching a historical high. Total floor space under construction rose only 1.3% (compared to 10.4% growth in 2014), while housing starts decreased 14% in 2015. The difficulties that the property sector faced did not bode well for the usage of silver conductors, contacts, switches and fuses application.

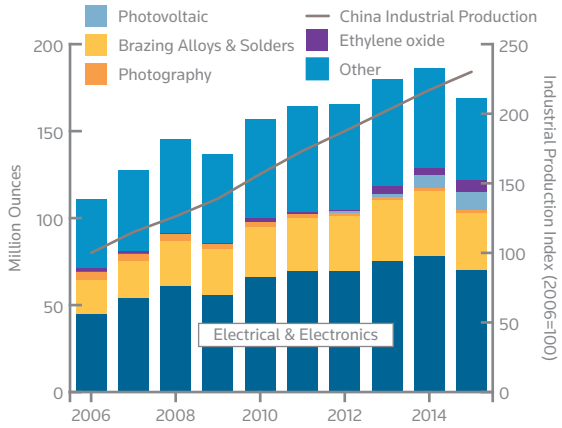
Turning to silver brazing alloys and solder, demand fell by 11% to 33.3 Moz (1,037 t) in 2015. According to China Household Electrical Appliances Association, the country's production of refrigerators reached slightly less than 90 million units last year, a modest 1.9% year-on-year decline. This had a negative effect on demand for refrigeration compressors, which is the primary application of silver in home appliances. Production of air conditioners, which had increased 11.5% in 2014, was only flat, remaining at 156 million units in 2015. Some of the decline in silver demand from this sector, however, was partially offset by the continual growth seen from the railway sector. China built more than 9,000 kilometers of new railroad construction last year. During the period of economic uncertainties, China will most likely continue to boost infrastructure projects to keep the economy afloat.

The Chinese photovoltaic industry continued to expand in 2015, and was one of the few bright spots that saw demand for silver from the country actually increase. Chinese solar cell production reached 41.9 GW last year, a 47% year-on-year increase. Despite falling short of the initial target, there was still 16.5 GW of solar power connected to the grid last year, and bringing total installations to 43.3 GW, the largest user of solar power in the world. We expect the Chinese solar industry to continue its upward momentum into 2016, as the government officials have recently announced that the country plans to add 15-20 GW of solar power annually for the next few years. Regardless of the oil price, the desire to have more environmentally friendly energy within the country, and to counter the economic downturn, means the Chinese government has been very supportive for the domestic solar industry, and will likely remain so in the near future.

Silver usage in the Chinese ethylene oxide (EO) industry rose by more than 67% to 6.7 Moz (209 t). The increase in demand was mostly due to a rise in EO production capacity. In 2000, the local production capacity of EO was only 885,000 t, but by the end of 2015 capacity increased to 5,844,000 t, an increase of over 27% from a year earlier. Seven EO plants in China were newly commissioned, accounting for 52% of additional capacity globally, whether in the form of new capacity or expansions. China's demand for the EO derivative product Mono Ethylene Glycol (MEG) far exceeds its domestic supply; therefore it has been importing MEG. The country's strong demand for MEG stems from accounting for 70% of the global production of polyester fibre in 2015, for which MEG is required in the production process. This strong market position has driven the rapid development of EO capacity in the country, particularly within the past decade. Newly commissioned domestic EO capacity will continue to account for a large portion of silver demand from the EO industry in the medium term.

Japanese industrial demand rebounded in 2015 rising by 3% to 91.3 Moz (2,839 t). The annual increase may surprise given the state of the Japanese and global economy but the modest rise was entirely the result of significant gains in the production of silver powder with all other industry segments materially weaker. There were a number of key reasons behind the contraction in offtake for the other segments. First, domestic consumer spending remained weak, as evidenced by poor demand for electronics products and household appliances. This was in turn the result of the country's ongoing struggling economy which saw Japan slip back into recession in the second and third quarters, amid a reduction in business investment and a meek global economy. Japan's economy contracted further

CHINESE INDUSTRIAL FABRICATION



Note: Photovoltaic in "Other" category prior to 2011
Source: GFMS, Thomson Reuters; Oxford Economics

in the final three months of 2015 as the nation struggled to break free of a cycle of expansion and contraction despite more than three years of the Abenomics program. For the full calendar year 2015, Japan's economy expanded just 0.4%, as a 2.7% increase in exports helped offset a 1.2% drop in private consumption.

A secondary impact on offtake has been the weaker export trade in some industry segments and while the weaker yen assisted fabricators in a competitive global market weaker demand in regional markets dragged fabrication volumes lower. Japan recorded a trade deficit for the fifth straight year in 2015, but the deficit narrowed by 78% over 2014 as lower oil prices pushed down import costs and a weaker currency helped spur a modest increase in overall exports. Moreover, Japan's trade balance swung to a surplus in December, as an 18% annual drop in imports offset the 8% drop in exports.

The slowdown in emerging economies, especially in China, was more pronounced in 2015, and that affected Japan's exports and production. Exports of high technology products have been the engine room of Japan's economic growth since 1960. Indeed exports account for around 17% of total GDP. Production of consumer electronics declined 4% in 2015 according to Japan Electronics and information Technology Industries Association (JEITA), while industrial electronic equipment held broadly flat. Perhaps of greater concern to the industry was the 6% decline in exports of consumer electronics, with this decline following a more precipitous fall of 14% in 2014. In 2015, Japanese total exports to China fell 1.1%, to 13.2 trillion yen (US$95.8 bn). However, exports to the United States rose 11.5% to

JAPANESE NON-PHOTOGRAPHIC NITRATE & CONTACT PRODUCTION

(million ounces)	2011	2012	2013	2014	2015
Non-Photo Nitrates	5.1	1.2	1.1	1.1	1.0
Contacts	4.0	3.4	3.9	2.1	2.0

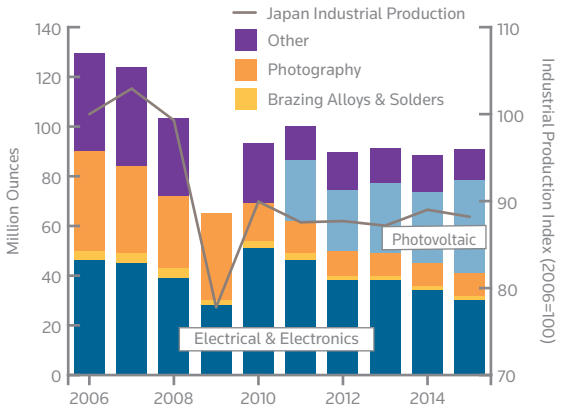
Source: GFMS, Thomson Reuters

15.2 tn yen (US$128.6 bn) in 2015, making the United States Japan's largest export market.

Turning to individual sectors' performance, the electrical and electronics sector fell by 9% to 30.4 Moz (945 t). Demand for silver nitrates, (excluding the photographic industry, which edged 5% lower after appearing to have stabilized after material falls over the last decade), recorded a double digit decline despite stronger automobile demand offset by a sizable drop in other industrial applications. This trend was widespread with demand for silver used in contacts, connectors, and switches (the back bone of the industry) retreating considerably.

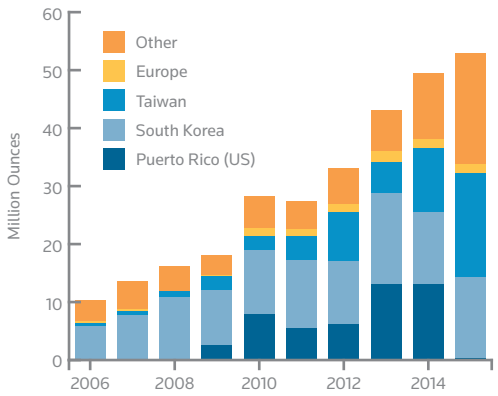
As outlined earlier, silver powder production used in the photovoltaic industry recorded impressive gains in 2015, helped by continued robust demand on the domestic front and stronger export orders. This segment has exploded over the last two years as part of an ambitious national effort to promote renewable energy and cut the nation's dependence on nuclear energy after the Fukushima incident. The rapid expansion in China has also necessitated an expansion in Japanese production. Since 2012, the Japanese government has implemented a feed-in Tariff (FiT) for electricity generated from renewable energy with new PV module production exceeding 9 GW last year (addressed in greater detail on page 65).

JAPANESE INDUSTRIAL FABRICATION



Note: Photovoltaic in "Other" category prior to 2011
Source: GFMS, Thomson Reuters; Oxford Economics

JAPANESE SILVER POWDER EXPORTS



Source: GFMS, Thomson Reuters

Offtake in the brazing alloys and solders sector also declined last year by an estimated 6% to 1.9 Moz (59 t) as weaker domestic demand coupled with a cooling export sector dragged silver consumed lower in these segments. Elsewhere, silver used as a catalyst during the production of ethylene oxide dropped by close to half in 2015. Indeed, while there was no newly installed capacity in Japan in 2015, replenishment of silver for existing facilities was estimated to have retreated from the very low level of the year prior.

Industrial fabrication in **Hong Kong** is estimated to have eased by 10% in 2015 to reach 4.4 Moz (137 t), in part due to some relocation of production to other Asian countries. Hong Kong's electronics industry is the largest merchandise export earner for the territory, accounting for 64% of Hong Kong's total exports last year. A substantial portion of such exports, largely re-export business, are regarded as high-tech products, including telecommunications equipment, semiconductors and computer items. Hong Kong's total electronics exports increased 2% in value terms last year, mostly due to the positive contribution from the re-exports segment. During the year, 63% of total electronics exports were to the Chinese Mainland, which increased a mere 1%. Meanwhile, exports to the EU region registered a more healthy growth of 7%. In value terms, exports of domestic production fell 10% year-on-year, a big improvement from 2013 and 2014, when 30% and 23% annual declines were registered respectively. We expect this declining trend to continue in 2016, however.

South Korean industrial offtake fell 25% in 2015 to an estimated 15.4 Moz (480 t), the lowest level since 2001. The drop last year was due to a combination of a worsening domestic economy, some relocation of production to other Southeast Asian countries, and a more competitive global electronics market. The Bank of Korea cut interest rates in June last year, during the outbreak of the Middle East Respiratory Syndrome (MERS) to an historical low of 1.5%.

The South Korean HSBC/Markit Manufacturing PMI, which tracks the domestic manufacturing activities, had eight months in 2015 with a reading of below 50 – indicating the Korean industrial sector was contracting. Indeed, the PMI reading was just 46.1 in June, the lowest since 2012. The PMI readings for the first three months this year were also

TABLE 6 - SILVER FABRICATION: ELECTRICAL AND ELECTRONICS (INCLUDING THE USE OF SCRAP)

(million ounces)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
China	44.7	53.6	60.9	55.4	66.2	69.1	69.5	75.3	77.8	69.9
United States	55.0	57.7	62.2	53.4	74.6	67.0	56.1	53.1	53.8	53.9
Japan	46.0	44.8	38.7	28.2	51.1	46.2	38.4	38.3	33.6	30.4
Germany	19.7	21.4	21.7	15.7	21.3	20.3	17.2	17.0	16.7	16.7
India	10.8	14.1	15.0	16.1	17.1	17.2	17.6	15.1	16.1	14.5
Taiwan	10.3	11.7	12.3	9.9	12.1	12.7	11.3	11.8	12.3	11.8
South Korea	13.8	14.7	15.9	12.5	16.1	16.0	15.5	14.6	13.3	10.0
Russian Federation	11.5	12.1	12.1	10.3	11.3	10.9	10.7	10.9	10.1	9.2
Mexico	2.0	2.1	2.1	2.2	3.8	5.0	5.7	5.7	5.8	6.9
France	8.2	8.5	8.6	5.7	6.9	6.1	5.3	5.3	5.1	5.2
United Kingdom	4.4	4.5	4.7	3.4	3.9	4.0	3.9	3.9	4.0	4.1
Italy	3.6	3.9	4.1	3.4	3.9	3.3	2.8	2.5	2.4	2.3
Hong Kong	3.3	3.5	3.3	2.7	3.1	3.1	3.0	2.8	2.3	2.1
Czech Republic	1.0	1.1	1.3	1.0	1.2	1.3	1.4	1.4	1.5	1.4
Brazil	0.9	1.5	1.5	1.2	1.6	1.6	1.6	1.5	1.5	1.3
Turkey	1.0	1.1	1.1	0.9	0.9	1.0	0.9	0.9	1.0	1.0
Kazakhstan	1.1	1.1	1.1	1.0	1.1	1.0	1.0	1.0	1.0	0.9
Uzbekistan	1.1	1.1	1.1	1.0	1.1	1.0	1.0	1.0	1.0	0.9
Australia	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7
Other Countries	3.3	3.3	3.3	2.7	3.3	3.2	3.1	3.3	3.4	3.5
World Total	**242.3**	**262.5**	**271.7**	**227.4**	**301.2**	**290.8**	**266.7**	**266.0**	**263.4**	**246.7**

below 50. Another signal of the weakness of South Korea's economy can be seen in its export volumes. For the full year 2015, Korean exports fell 7.9%, the steepest decline since 2009 and the first annual fall in three years. What is more concerning is that the decline in exports seemed to have accelerated, with the December reading falling 13.8% year-on-year, and retreating over twelve consecutive months. Korea's exports continued to tumble in the first three months of this year, although there was some improvement in March.

One of the major drags on Korea's economy is China's slowing economic growth. China's economy slowed down considerably last year, and it certainly affected orders to the Korean factories. China took up a quarter of Korea's total shipments annually, and Korea's exports to China fell 5.6% in 2015. Another issue that many Korean manufacturers point out is that the domestic industry was being dragged down by currency depreciation initiated by neighboring countries. Against the dollar, the Korean won depreciated 10.5% from 2013 to 2015, while the Japanese yen depreciated 38.7% during the time span.

Taiwan's industrial use of silver is estimated to have decreased by 4% last year to 14.54 Moz (452 t), 13% below the peak seen in 2007 and back to the level of 2013 after a slight recovery in 2014. This recession was mostly a combined result of weaker exports and sluggish domestic economy. Taiwan's economy grew at its slowest pace in 2015 since the global financial crisis battered the country in 2009, with GDP rising by only 0.9% last year. The local industry was negatively affected by the lukewarm global economy, as total exports in 2015 fell by 10.6% from a year earlier, the biggest annual drop since 2009. Taiwan's exports of electronic control devices, the gauge for global technology product demand, dropped by at least 15% in 2015, pulling down the demand for silver in the local electronics sector. Feedback from electronics manufacturers said they have cut working hours over the Chinese New Year holiday in 2016, due to the overcapacity resulting from declining demand.

We estimate that demand for silver from the local electrical and contacts industry was down by 4% to 11.8 Moz (368 t) in 2015. Silver demand from the local photovoltaic industry, however, thanks to the strong demand from China, saw a stellar growth of 23%, which made up for part of the loss in Taiwan's silver industrial demand.

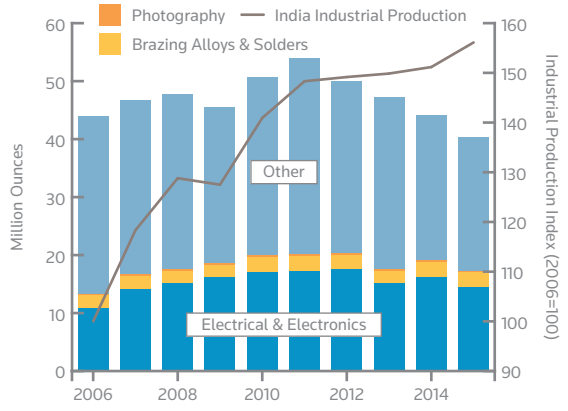
INDIA

Indian industrial fabrication was down by 8.5% to 40.4 Moz (1,256 t), the lowest in a decade. In essence the industrial segment consumed approximately 14% of silver supplies, which includes imports, domestically refined and scrap. The macro-led factors, tight liquidity and increasing competition from China were a primary reason, sharp reduction in exports exacerbated the fall, more particularly in the electrical and electronics segment.

The electronics sector consumed 14.5 Moz (451 t) last year, the lowest in eight years. This sector contributed to 36% of the consumption in the industrial segment. The offtake from silver contact exporters declined sharply. Silver contact fabricators from unorganized trade have been shipping silver strips for many years; this was done to ensure higher turnovers and bag genuine orders despite being a costly practice. Such practices ended, however, margins were under pressure with receding global demand.

The electrical contacts market, largely influenced by demand from the LV switch gear sector, shrank despite growth in power transmission lines, which grew at a monthly average rate of 2,338 circuit kilometers (ckm) per month as against 1,481 ckm per month in 2014. This was because a large part of consumption was catered for from inventory carried over from 2014 as the delay in execution of projects had led to excess inventory, thus it was largely a delivery of backlog orders. Additionally, poor offtake from the oil and gas industry due to sluggish growth has had a material impact on the order books of electrical contacts and electroplating industry. Substitution is also

INDIAN INDUSTRIAL FABRICATION



Source: GFMS, Thomson Reuters; Oxford Economics

SILVER ETHYLENE OXIDE CATALYST MARKET

Ethylene Oxide (EO) is a critical raw material in the production of products like antifreeze, polyester, and detergents. In the past decade, EO capacity growth has averaged 2.4 percentage points higher than global economic growth. This faster rate of growth is primarily owed to above-trend growth in polyester demand, which is made from an EO derivative called monoethylene glycol (MEG), particularly from the textile industry. Most ethylene oxide is used to produce MEG (around 67%), while the balance is used to make other EO derivatives like ethoxylates, DEG, and ethanolamines. Polyester demand accounts for about 59% of EO demand and is used to make fibers for the textile industry, plastic bottles, and films in food packaging and thermal insulation applications.

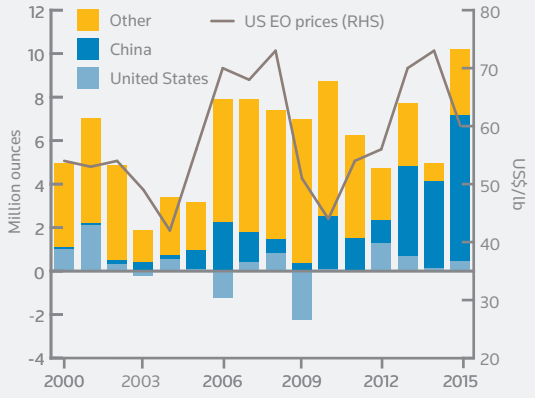
Polyester fiber, which is used in textile products like apparel and carpeting, accounts for an estimated 36% of ethylene oxide demand at present, making it the largest source of end product demand for EO. This share has been growing, as polyester's share of textile demand has increased significantly over the long term. According to PCI Fibres, polyester's share of the textile market increased from 22% in 1990 to 54% in 2015, while all other fibers lost market share in the period. Polyester's share has grown as changing consumer preferences have favored the fiber's water resistant and durable characteristics. Additionally, polyester is very cost competitive against its peers like cotton and is highly recyclable. According to IHS, while total fiber demand has grown at a 1.6 multiple of GDP growth since 2000, polyester demand has expanded at 2.6 times the rate of GDP growth. Polyester is expected to retain and grow its market share in the fiber industry and be the primary driver of fiber demand growth in the future.

Ethylene oxide prices declined drastically averaging 18% lower in the United States and 12% lower in Northwest Europe, according to ICIS prices. This price drop was due to a combination of capacity exceeding demand and lower cost production boosting price competition among market players, similar to trends seen in the oil market. The long term above-trend growth in demand for polyester, however, is expected to remain intact, which will continue to drive capacity growth in the EO industry.

Last year, silver demand from the EO industry totaled 10.2 Moz (317 t), just over double the 5.0 Moz (154 t) of demand in 2014. This was the highest level of demand on record from the industry. Of the 10.2 Moz, 10% was replacement demand for existing capacity. By the end of 2015, 137.5 Moz (4,277 t) of silver were sitting in EO plants globally, which represents about 16% of mine production annually. China accounted for 66% of demand last year. New plants were also commissioned in Singapore and the United States last year.

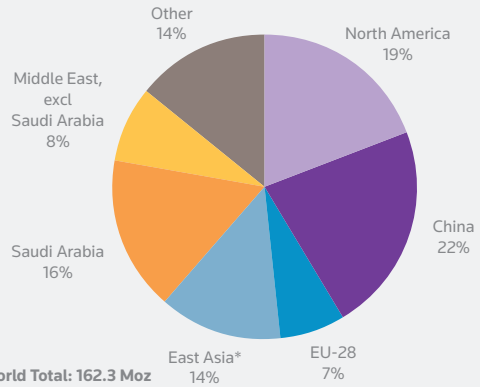
Seven EO plants in China were newly commissioned, accounting for 52% of additional capacity globally, whether in the form of new capacity or expansions. China's demand for the EO derivative product MEG far exceeds its domestic supply; therefore it has been importing MEG. The country's strong demand for MEG stems from accounting for 70% of the global production of polyester fiber in 2015, for which MEG is required in the production process. This strong market position has driven the rapid development of EO capacity in the country, particularly within the past decade. Newly commissioned domestic EO capacity will continue to account for a large portion of silver demand from the EO industry in the medium term.

GLOBAL SILVER EO DEMAND



Source: ICIS via Eikon; GFMS, Thomson Reuters

LOCATION OF SILVER INSTALLED IN EO FACILITIES IN 2015



World Total: 162.3 Moz
*excl China
Source: GFMS, Thomson Reuters

NEW AND GROWING SOURCES OF DEMAND FOR SILVER

New uses for silver are numerous, while large-scale adoption of silver in mass market applications are few and far between. The photovoltaic industry is the most recent example of large-scale adoption of silver; however this industry's usage of the metal is slated to grow at normalized rates in the future. Silver has proved to be the optimal material in photovoltaic cells and the decision to use silver over other materials like copper is determined by the balance among cost, compatibility, and efficiency.

There are many existing applications currently driving fresh demand for silver due to changes in consumer preferences or technological innovations in product design, albeit that those demand volumes are minimal at present. Silver is competing with indium tin oxide (ITO) in transparent conductor applications. Within this market, silver has gained favor in applications where screens are becoming larger or where flexibility's role is becoming more significant. At this point in time, it is highly uncertain if silver will increase its market share in this product meaningfully in the long term.

Silver is competing well against various chemicals and materials in antimicrobial applications. Particularly, silver's use in textiles has grown exponentially. Active wear and undergarments have driven usage for silver in clothing and the mention of silver in these garments triggers a value-premium perception in the mind of the consumer. Silver is also carving out some market share in the wearables market, an area that represents a bridge between two of silver's largest uses, electronics and jewelry. While watches are the dominant wearable, companies are adding sensors to bracelets and necklaces to more closely connect the consumer to their devices.

There are many industries in the infancy stage where silver could become the optimal material for usage on a commercial scale. These industries/applications include, but are not limited to, the "Internet of Things" and OLED lighting.

The "Internet of Things" is a technology concept that emerged around the turn of the century to describe data sharing between physical objects through internet connectivity and feeding this data into computer-based systems. Arguably, a precursor to the "Internet of Things" is radio-frequency identification (RFID), a device with which the silver market is all too familiar with respect to silver usage. Physical objects are embedded with sensors, which connect with computers. A portion of these sensors is currently fitted with printed silver circuitry, and this portion is expected to grow considerably in the future.

According to Gartner, a technology consultancy, approximately 3.9 billion connected things were in use in 2014. This number is expected to increase to 25 billion by 2020, representing a 35% compounded annual rate of growth. Silver use in sensors has the most promising growth potential in applications for building automation, environmental monitoring, healthcare, and smart lighting. One example of commercial-scale building automation applications is Nest Thermostat, which contains multiple sensors designed to "learn" your temperature and humidity preferences over time and regulate accordingly.

Organic Light Emitting Diodes (OLED) is a flat light emitting technology, composed of a series of organic layers between two conductors. OLED technology is used in displays and lighting products. While silver's use in displays is minimal, use in lighting is significant and is a potential source of emerging commercial usage.

Silver busbars are used between electrodes in OLED lights to distribute voltage and improve efficiency, which is a key competitive advantage to the technology. Today OLED lighting products are expensive, which is the main hurdle to commercial-level adoption, but the efficiency features are attracting consumers. The lighting market is highly fragmented though, so the scale of adoption is highly uncertain.

According to IDTechEx, the OLED lighting market is forecast to reach $1.9 billion by 2025, from somewhere under $200 million at present. Konica Minolta and LG Chem are two companies that have actively pursued commercial adoption of OLED lighting. OLED's main competitive advantage against other illumination products is that it is a surface light, and therefore can illuminate a large area. Large area lighting is expected to see demand growth in hospitality and hospital settings where brightness and light emission are valued.

Were the "Internet of Things" industry and OLED lighting to take off, these could be potentially large sources of growth for silver industrial demand. Sizable volumes are not expected in the immediate term though.

TABLE 7 - SILVER FABRICATION: BRAZING ALLOYS AND SOLDERS (INCLUDING THE USE OF SCRAP)

(million ounces)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
China	19.4	21.3	25.9	26.6	28.6	30.5	31.4	34.7	37.6	33.3
United States	7.2	7.7	7.2	5.2	5.9	6.0	5.3	5.7	5.8	6.0
India	2.3	2.2	2.2	2.2	2.6	2.7	2.4	2.1	2.6	2.5
United Kingdom	3.1	2.4	2.3	1.8	2.3	2.4	2.2	2.1	2.2	2.2
Germany	3.4	3.6	3.4	2.3	2.8	2.8	2.3	2.2	2.1	2.1
Japan	3.9	4.0	3.7	2.3	3.4	3.0	2.5	2.3	2.0	1.9
Russian Federation	1.9	2.0	2.0	1.7	1.9	1.8	1.8	1.8	1.8	1.6
S Korea	2.0	2.4	2.6	2.1	2.3	2.4	2.2	2.1	1.9	1.6
Canada	1.5	2.4	2.2	1.1	1.7	1.7	1.6	1.6	1.6	1.6
Italy	2.4	2.5	2.4	1.7	1.8	1.7	1.6	1.5	1.5	1.5
Switzerland	1.4	1.4	1.4	1.2	1.3	1.3	1.3	1.2	1.3	1.3
Taiwan	1.2	1.3	1.2	1.0	1.2	1.3	1.2	1.2	1.1	1.1
Brazil	0.8	0.8	0.8	0.9	1.0	1.0	1.0	1.0	0.9	0.8
Australia	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5
France	0.8	0.9	0.8	0.5	0.6	0.6	0.5	0.5	0.5	0.5
Belgium	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.5	0.5	0.5
Mexico	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Spain	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.4	0.4	0.4
Other Countries	1.0	1.1	1.2	1.0	1.3	1.3	1.4	1.4	1.4	1.4
World Total	**54.7**	**58.3**	**61.6**	**53.6**	**60.9**	**62.7**	**60.6**	**63.2**	**66.1**	**61.1**

playing a role, with the introduction of copper graphite based electrical contacts that are now replacing the silver graphite contacts used in miniature circuit breakers (MCB). Silver's quality of electrical resistance continued to help lift offtake in residential electrical systems as a contact in MCB. However, this demand was supplied through imported fine silver strip which primarily originated from the United Kingdom and United States.

The solders and brazing alloy sector, which contributes 6% of the consumption in the industrial segment declined by 6% year-on-year. Fabrication volumes declined as there were delays in the execution of projects in infrastructure and a slowdown in the real estate sector. Additionally, we have noted an increased dependence on imported brazing alloys by the refrigeration industry. Demand for silver sputters by architectural glass manufacturing companies was catered for by importing from the United States.

Last year India installed nearly 2 GW of solar powered plants, of which more than three-quarters are estimated to be connected to the grid and the rest were rooftop installations. With last year's addition, total installed capacity has now crossed 5 GW. The speed is snail's pace given that the 2022 target is 100 GW. The slowing growth is partly attributed to bidding of lower unit rates, but failing to execute the project. Increased solar panel installation hasn't led to an increase in consumption of silver in India; this is because panels are still largely imported. There are just two firms who are involved in large scale production, and again silver paste is imported; supplied by fabricators located in Japan, Russia, Taiwan, South Korea, and the United States.

The demand for silver in the usage of food category saw lower offtake from fabricators of silver foil (varak), primarily related to higher inventory carried over from the previous year. The end consumption volumes were, however, as much as 2014. That said, higher price expectations have led to stocking as prices declined. Increasing awareness of nutritional purpose and health benefits of silver continues to be a key driver; however, its growth in volumes will be dependent on a shift from low quality products. Another category of importance is jari (silver thread), which increased. However, the volumes are still one-third of the 2005 peak. The gains last year were largely attributed to an increasing customer base in modern fashion and not just traditional attire.

TABLE 8 - SILVER FABRICATION: PHOTOGRAPHIC USE (INCLUDING THE USE OF SCRAP)

(million ounces)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
United States	46.4	34.4	28.1	23.4	20.2	17.9	16.8	16.0	15.3	14.8
Belgium	28.3	26.9	23.5	18.6	17.4	15.5	14.4	13.6	13.5	13.3
Japan	40.2	34.7	29.2	19.6	15.0	13.2	9.7	9.5	9.3	8.8
United Kingdom	18.4	11.8	9.9	8.6	9.0	9.4	8.4	7.4	6.7	6.5
China	5.0	4.6	3.7	3.1	2.6	2.4	2.2	1.9	1.8	1.6
Russian Federation	2.4	2.1	1.8	1.5	1.4	1.2	1.2	1.1	1.1	1.0
India	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Brazil	0.0	1.4	1.3	1.0	1.4	1.2	1.1	0.5	0.3	0.2
Czech Republic	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Australia	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other Countries	0.8	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total World	**142.2**	**117.0**	**98.2**	**76.4**	**67.5**	**61.2**	**54.2**	**50.5**	**48.5**	**46.7**

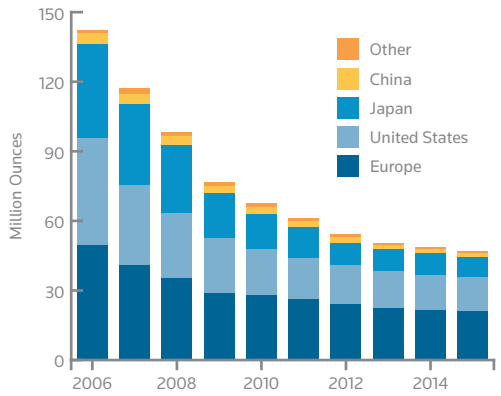
PHOTOGRAPHY

- ***Demand for silver used in photographic applications declined by 4% last year, the slowest rate of decline since 2004.***

Global photographic demand for silver fell by just 4% in 2015, settling at 46.7 Moz (1,452 t). Although this marked the lowest total recorded in our data series, it was nonetheless the lowest percentage decline since 2004. The modest contraction followed a similar decline in 2014, reflecting the fact that the bulk of structural change in the photography market is behind us and that current fabrication volumes may be largely sustainable looking forward. Indeed, there are new technologies that in the coming years may even lead to a return to growth within this segment. To place the long term decline into perspective and the importance that this sector previously played within the silver market, it is worth reviewing the impact the digital revolution has had on this sector. Within the last decade demand from this segment has fallen by almost a third or 95.5 Moz (2,970 t). In 2015, photography's share of total silver physical demand stood at just 4%, compared to 15% in 2006, with photography's share in 1980 exceeding 50% of total demand.

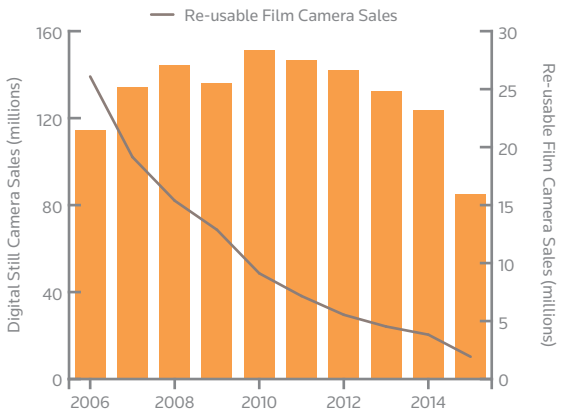
The rapid decline in the use of silver in this segment has almost entirely been at the hands of the shift to digital applications, with this technology eroding the use of silver halide in most of the core demand segments. While demand for consumer photographic film and paper continued to see significant falls last year, demand from within the medical/healthcare system looks to have found a floor, with industry contacts suggesting that demand from the developing world for the more cost effective wet chemical X-ray system is close to offsetting the migration

WORLD PHOTOGRAPHIC FABRICATION



Source: GFMS, Thomson Reuters

DIGITAL AND FILM CAMERA SALES



Source: Photofinishing News Inc.; GFMS, Thomson Reuters

to digital applications in more advanced economies. In addition, demand for industrial X-ray used for the testing of support beams used in construction, bridges and evaluation of welds and in testing metal plates has also steadied after precipitous falls in the early years of digital.

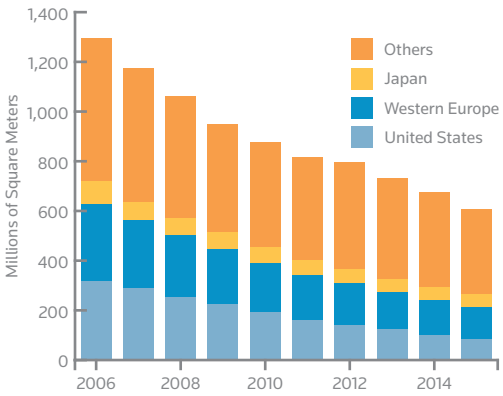
One area of the industry segment that is rapidly expanding is in touch screen flexible mesh technology where silver is increasingly being used. The touch panel sector, which has been growing explosively over the past decade, offers tremendous opportunities for new materials and next-generation technologies. Earlier in the decade this technology was dominated by the use of Iridium Tin Oxide (ITO), but recent years and notably 2015 saw significant inroads for the touch panel market as adoption of non-ITO films made of silver nanowire, silver mesh, silver halide, and silver nano particles have been trialed and implemented on a commercial scale. To date, touch panels have been mostly employed for applications with relatively small screens, such as smartphones, tablet PCs, and car navigation systems, but this is about to change with larger devices such as all-in-one (AIO) PCs, and large notebook PCs expected to boost demand in the coming years.

In the United States photographic demand retreated by 4% to reach 14.8 Moz (459 t), a similar modest decline to that seen in the previous year. Demand for both photographic film and color negative paper offtake continued to dissipate in 2015*, falling 8% and 16% respectively, with these losses offset by a less severe contraction in the medical sector. (*Source: Photofinishing News)

Japanese offtake fell by 5% to 8.8 Moz (275 t) last year, the third successive year of moderate single digit declines. This, in contrast to the 2008-12 period, where the average annual fall was in excess of 20%. Demand for photographic film, for amateur and professional use, saw another material fall last year, dropping over 30%, although from a low base after significant contraction over the last decade. There has been one bright spot with Fuji's Instax instant film and cameras selling in record numbers and far outpacing the company's digital cameras. The company estimates that it sold 5 million of the cameras in the fiscal year and that it will sell at least 6.5 million in the next year. Medical demand for wet chemical X-ray has broadly stabilized, slipping only marginally, as developing world demand offset migration to digital applications.

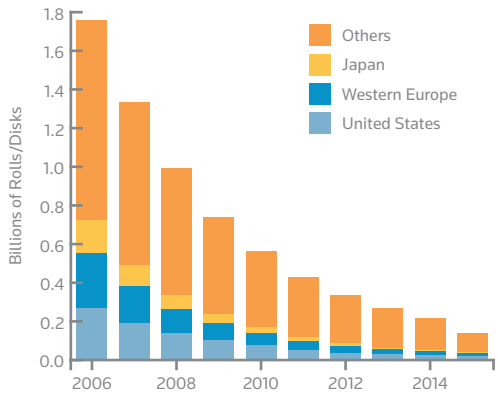
Demand for silver from the photographic sector in **China** dropped by 13% last year to 1.6 Moz (49 t). Similar to previous years, last year's decline was largely related to the continued structural decline following the introduction of digital applications. Photo kiosks where consumers can print images taken on smart phone or digital cameras provided demand for photographic paper although this was not sufficient to offset losses in the consumer film market and other industrial segments. In the medical sector, silver use in X-ray declined only at the margin as the weaker economy slowed migration to digital systems.

WORLD COLOR PHOTOGRAPHIC PAPER CONSUMPTION



Source: Photofinishing News Inc.

CONSUMER FILM SALES



Source: Photofinishing News Inc.

PHOTOVOLTAIC

- ***Demand for silver in the photovoltaic (PV) industry maintained its growth in 2015, following a 1% rise in 2014. Silver offtake in this segment recorded a substantial gain, increasing by 14.4 Moz (448 t) or 23% year-on-year, to an estimated 77.6 Moz (2,414 t), driven by stellar growth in Chinese solar panel installations as well as its recovery from years of excess capacity of solar module production.***

Silver is most commonly used in the front and back contact in solar cells in the form of paste, while the remaining demand comes from other parts of PV manufacturing such as electrical contacts and inverters. Given that demand for silver paste accounts for a dominant proportion of silver used in solar industry, our evaluation of silver use in the photovoltaic market primarily focuses on its consumption of metallization paste. In terms of paste for thick-film cell, which accounts for over 95% of total silver consumption in PV, the front-side paste is made up of 90% of silver, while the rear-side is 45% to 55% silver, depending on production process. For each cell (which produces 4.2 W on average), the consumption of front-paste is about three times that of the rear-side. Under our methodology, fabrication is defined as the transformation from silver powder to metallization paste for solar modules. As a precursor of silver paste, we calculated the production of silver powder allocated to this industry as a reliable proxy for demand in PV.

Silver powder production for the solar industry increased by 23% year-on-year to in 2015, to 77.6 Moz (2,414 t), with growth seen in all three primary markets. Japan maintained its position as the largest global producer for the second consecutive year, consuming 37.3 Moz (1,160 t) of silver, compared to 28.4 Moz (883 t) in 2014. Production from the United States held firm, rising by 3.1 Moz (96 t) or 11% last year, accounting for 39% of global demand, however, down from 43% in 2014. Meanwhile, China, with its fast development in powder manufacturing capability, raised its market share to 13%, up from 12% a year ago. Though the bulk of this production consisted of powder used for back-side paste, the growth was also derived from that for front-side paste, indicating the potential for further growth.

Strong growth in Japan's powder production was partly derived from its exports to Taiwan and the United States, with their increasing demand for silver powder as the raw material in silver paste manufacturing, which was then exported to China for solar cell production. Global solar capacity added another 55 GW last year (40 GW in 2014), the third consecutive increase

ESTIMATED SILVER POWDER PRODUCTION FOR PV BY COUNTRY

(million ounces)	2012	2013	2014	2015
Japan	24.5	28.1	28.4	37.3
United States	37.8	32.5	27.2	30.2
China	0.6	1.9	7.6	10.1
World Total	**62.9**	**62.5**	**63.2**	**77.6**

Source: GFMS, Thomson Reuters

that has seen the industry expand at an average growth rate of 53% over the last decade. Meanwhile, China, the world's largest solar PV producer, saw its solar cell production surge to 41.9 GW in 2015, followed by 9.4 GW of new capacity for Taiwan and 3.5 GW for Japan.

Solar cell production had grown exponentially from 2005 to 2011, with an average growth rate of 67% per annum over this period, with fabrication more than doubling in 2010. However, the meteoric rise of solar cell production without a comparative growth in demand, saw a massive build up of excess capacity in the industry. Tensions had been raised with anti-dumping tariffs on China-made solar modules between the United States, the European Union and China. As such, solar cell production growth halted in 2012, and the market had to digest the excess inventories thereafter. The market returned to impressive growth in 2015, increasing 32%, led by generous government subsidies which facilitated a sharp rise in installations, especially within China. However, as the subsidies are expected to be adjusted lower in the second half of 2016, Chinese manufacturers across the supply chain (from silver powder/paste to solar cells) are rushing to expand their capacity to cater to the immediate demand from domestic end-consumers, taking advantage of the higher subsidy in the first half. As a result, overcapacity within the industry could resurface again later this year.

The price erosion in PV modules was mainly caused by huge overcapacity along the PV value chain in 2011 and 2012. Consequently, pressure on cells and module manufacturing persisted for a number of years. Manufacturers sought to reduce costs in a bid to catch up with the falling prices through two methods, firstly by improving solar cell efficiency and secondly by lowering production costs. Higher efficiency solar cells were the priority as they have the potential to reduce total costs per watt of electricity generated. Therefore, crystalline silicon modules (based on thick-film technology) are expected to remain the dominant technology thanks to their relatively high efficiency and stability. This is a favorable development for silver since the loadings per cell in thin-film cells have only 1% of the silver in thick-film cells in general.

Silver loadings per cell remained on a downtrend in 2015, dropping by 15% from the previous year to an estimated 0.14g/cell. Given that silver paste only accounts for a small portion in the total cost (5%), there is not a great deal of incentive for the industry to reduce silver paste consumption per cell due to a technical bottleneck; in other words, a further reduction of silver will undermine the efficiency of the cells.

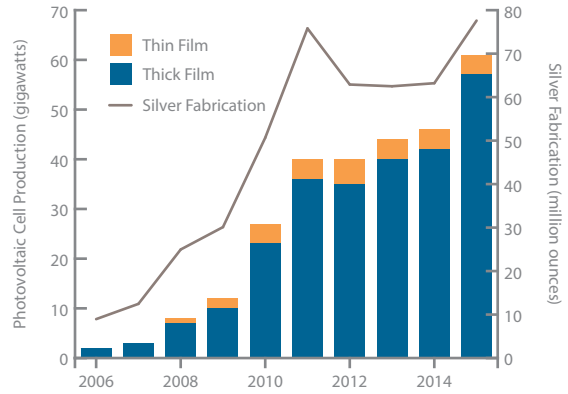
In terms of the influence from a technological development, there are two major areas worthy of attention. PERC (Passivated Emitter Rear Cell) solar cell, which increases cells' efficiency from 20.0% to 20.4% (in most cases, 0.05 percentage points improvement should be seen as a higher level), is a promising one that has already been put into production; another is HIT (Heterojunction with Intrinsic Thin Layer), which will double the consumption of silver in one cell while increasing the efficiency to 24%, which means a rise of 20% in conversion efficiency when compared to a traditional cell. Therefore, silver loadings per cell could be affected by these two developments. However, any improvement on conversion efficiency should be seen as positive news for the solar industry, as it will strengthen solar energy's competitiveness with traditional fuels from a cost perspective.

China, the world's largest producer of solar cells, saw its production rise to 41.9 GW last year, representing 68% of global production. In the previous years, most of the products were exported to Japan, the United States and European countries; however, with the support from the government on the expansion of renewable energy in the past year, the domestic PV market also boomed. Its annual installations were estimated at 16.5 GW for 2015; and although this failed to meet the government's target of 17.8 GW, it still represented more than a 50% increase year-on-year. According to the Chinese National Energy Administration, China is planning to add another 15 GW of solar PV capacity in 2016, and is projected to reach 143 GW of capacity by 2020 (its cumulative capacity is 43 GW as of 2015). However it remains to be seen if the Chinese government implements any further supportive policies, as the industry is highly dependent on subsidies due to its higher cost compared with traditional power.

Apart from solar cells, China could also play a more important role in powder manufacturing in the coming years. The technology development in producing silver powder used in the front and rear side of solar cells is expected to boost domestic silver powder production. Last year, China's silver powder annual production for the PV sector rose by 2.6 Moz (81 t) or 34% year-on-year, to 10.1 Moz (314 t).

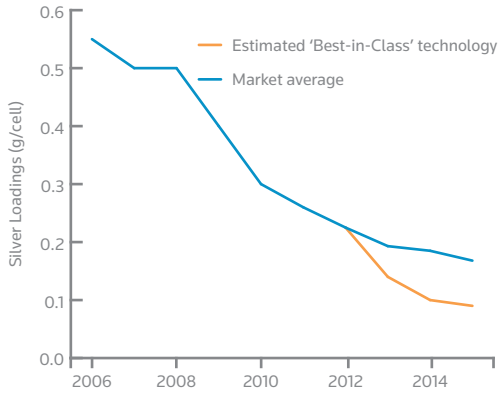
Furthermore, China domestic powder production is likely to have benefited from the reduction in capacity in Japan in early 2016. The decline of available supplies forced Chinese downstream fabricators to turn to locally produced powder and paste, providing a big opportunity for domestic powder and paste producers, who had suffered from both technological inadequacies and trade barriers as new comers for years. As a result, we expect Chinese domestic powder production to expand by double-digits in 2016, with several producers signaling that they are now capable of producing powder with the required specifications used in paste for front-side of c-Si cell fabrication.

SILVER PHOTOVOLTAIC FABRICATION



Source: Solarbuzz; Earth Policy Institute; ITRPV; GFMS, Thomson Reuters

SILVER LOADINGS IN PHOTOVOLTAIC CELLS



Source: GFMS, Thomson Reuters; ITRPV

8. JEWELRY & SILVERWARE

JEWELRY

- ***A record performance from India, and an improving economic backdrop in western markets, helped lift jewelry fabrication to an all time high of 226.5 Moz (7,045 t) in 2015.***

- ***Indian jewelry fabrication jumped 16% in 2015 to a new record, widening the gap over China, which recorded a marked decline.***

- ***Chinese fabrication saw another sizable decline in 2015, slumping 28% to 33.9 Moz (1,053 t) in 2015, driven lower by economic weakness and a drop in discretionary spending.***

Global jewelry fabrication edged higher in 2015, rising 1% to a new record level of 226.5 Moz (7,045 t). Even if modest, this was the third successive annual increase and was achieved in spite of a sizable decline in Chinese fabrication which was impacted by economic pressures and a drop in consumer spending. India widened the gap at the top of the leader board to record an impressive 16% annual increase to easily surpass the previous record set in 2014 as lower prices drove consumption levels higher. Changing fashion trends also made an important contribution, as the low price point coupled with higher price expectations led to rampant stock building. Elsewhere, an improving economy helped lift North American offtake by 5%, while Thailand enjoyed a 16% jump in demand, boosted by a stronger export sector. Demand was broadly stable in Europe, while the Middle East retreated 7%.

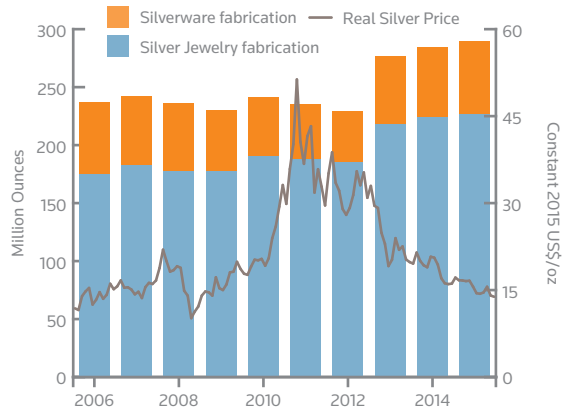
EUROPE

European jewelry fabrication remained broadly flat last year, at an estimated 34.8 Moz (1,081 t). This was due to diverging performances across the region's largest markets, which will be discussed in greater detail in this section.

Jewelry fabrication in **Italy**, the largest fabricating country in this region, was up 3% in 2015, to 18.4 Moz (572 t), the highest level since 2010. Last year's growth was mainly driven by higher exports, accompanied by a return to growth in local consumption. That said, the uptick in silver jewelry fabrication turned out to be less pronounced last year compared to the 12% growth a year earlier, due to weaker-than-expected demand from the country's key export destinations.

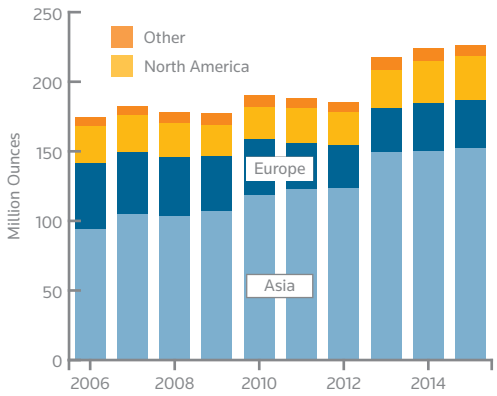
As illustrated on the chart on the next page, Italian jewelry exports registered a modest increase in 2015, with most of the key regions posting gains. Shipments to the United States, Italy's single largest export destination, rose by 8% in 2015. This was largely thanks to lower silver prices and improving economic sentiment. It is worth stressing, however, that growth in Italian silver jewelry exports to the United States had remained somewhat limited in the past two years, compared for instance to the 11% growth in 2013. This could be partly explained by the slower rate of decline in the silver price last year compared to 2013, when a sharp drop was registered. Another interesting driver had been a growing interest among consumers in yellow jewelry as gold prices continued to weaken.

WORLD JEWELRY AND SILVERWARE FABRICATION



Source: GFMS, Thomson Reuters

WORLD JEWELRY FABRICATION

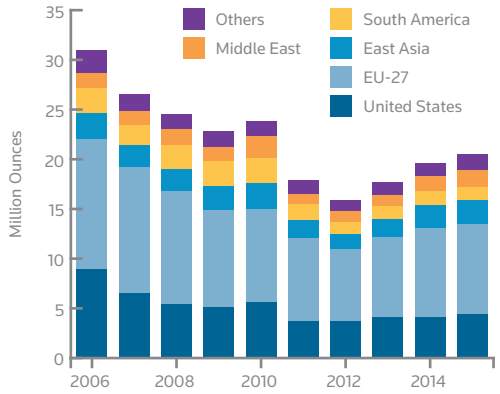


Source: GFMS, Thomson Reuters

The Middle East was another region that posted a gain; shipments from Italy jumped by 12%, mainly thanks to higher flows to the United Arab Emirates (UAE). Given the UAE's cultural affinity for gold and its role as a trading hub for the Middle East and North Africa, it is more likely to be a reflection of demand for silver jewelry in these regions. Exports to Europe were up by 2%, but a closer look at the constituent countries reveals that the performance was quite diverse. While in some countries demand for silver jewelry was boosted by lower prices, in others it suffered from a recovery in gold jewelry offtake amidst the lower gold price. It is worth mentioning a sharp drop in exports to Russia, which should not be viewed as a reflection of weaker demand for silver jewelry, but rather a shift towards domestically produced jewelry, as opposed to imported, which tends to be branded and more expensive, as is the case with Italian exports.

Turning to silver jewelry demand in Italy, it is worth noting a few positive developments here. While silver continued to benefit from substitution at the expense of gold at the lower end of the market, anecdotal evidence suggests that a shift away from non-precious jewelry towards silver has also been evident recently due to the lower price of precious metals. Affordability, as well as growing popularity among younger consumers, driven by fashion trends, has seen jewelry manufacturers, previously focusing predominantly on gold, to introduce silver jewelry collections in their shops. In addition, the economic hardship and a lack of ability to spend on luxury goods have led to a rise of so called bridge jewelry, which is mostly artisan-made using silver, alloys and gold-plated silver, and is priced between costume jewelry and more expensive fine jewelry.

ITALIAN JEWELRY EXPORTS*



Source: GFMS, Thomson Reuters

Silver jewelry fabrication in **Germany** contracted last year by 1% reaching 3.3 Moz (102 t). Domestic demand remained weak, hampered by competition for alternative materials and modern electronic devices. The trend was one of less extravagant designs and more filigree. Gold and silver-colored designs remained popular and silver jewelry was easily combined with other pieces. German fabricators, however, have witnessed increased competitive inflows from abroad, particularly Thailand, which has tripled shipments since 2011. Pandora has expanded production capacity in Thailand concentrating its fabrication base in the Asia Pacific region to serve global markets.

Turkish silver jewelry fabrication recorded an 8% drop to 4.4 Moz (137t) last year driven by, among other things, a general tougher macroeconomic environment. Turkish fabricators have increasingly struggled to sell jewelry domestically. Silver in Turkish lira recorded an average rise of 7.6% year-on-year. However, with strong competition domestically and abroad, margins have remained thin. Various initiatives to boost domestic brands are present through the government-initiated Turquality, for example, a program that supports domestic brands abroad.

Silver jewelry fabrication in **Russia** rose by 4% in 2015, to an estimated 2.9 Moz (91 t), the highest since 2010. Despite a modest increase, last year's outcome was quite upbeat when compared to gold jewelry demand, which continued to contract, marking the worst year since the 2008/09 crisis. Silver jewelry continued to benefit from substitution away from gold, particularly at the lower tier of the market, in light of poor economic conditions and high gold prices in rouble terms. That said, local demand for silver jewelry was somewhat restricted as life had generally become more expensive, putting pressure on consumers' disposable incomes and hitting retail sales of jewelry. It is also worth noting a partial shift in jewelry manufacturing towards silver, at the expense of gold, in an attempt to maintain factory production and not to lose qualified resources.

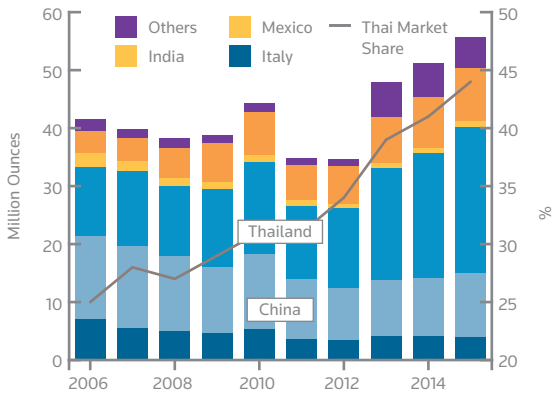
Jewelry fabrication in the **United Kingdom** in 2015 fell by 3% to 0.3 Moz (10 t), a decline that is marginally greater than hallmarking data suggests. This partly reflects the popularity of smaller pieces. It is not reflective of consumption in the country though, which continued to recover, albeit modestly. Instead, there is continued growth in demand for imported branded silver, of which a higher proportion is now hallmarked overseas.

In France, we estimate that silver jewelry fabrication declined last year, contracting by 2% to reach its lowest level since 2008. While demand for silver jewelry has been in decline for the last four years, the relative pace of declines has noticeably slowed. It is interesting to note that while the value of silver jewelry has risen, driven strongly by increased marketing from major brands over the last three years, total tonnage has been offset by a reduction in hypermarkets and basic silver products. Elsewhere across Europe, demand was broadly weaker as economic pressures limited discretionary spending. **Poland** saw fabrication volumes slip 11%, while **Spain** and **Cyprus** saw offtake dip 4% and 5% respectively.

NORTH AMERICA

North American jewelry demand increased to 31.1 Moz (967 t) in 2015, up 5% from the previous year. Fabrication was revised to a higher base of 29.7 Moz (925 t) in 2014 relative to last year's survey data, owed to an upward revision to Mexico's data. New information revealed a more significant transfer than previously accounted for of offshored U.S. manufacturing facilities to Mexico in recent years. The U.S. and Mexican jewelry manufacturing industries are heavily interwoven, driven by lower labor costs in Mexico and growing consumption in the United States. Mexico is now the largest jewelry fabricator in the region, surpassing the United States by 3.0 Moz (95 t) last year. Mexico's fabrication data for 2014 and 2013 were revised from 8.5 Moz (264 t) in 2013 and 7.8 Moz (243 t) in 2014 to 15.2 Moz (472 t) and 16.3 Moz (505 t), respectively.

US OFFICIAL SILVER JEWELRY IMPORTS



Source: GFMS, Thomson Reuters

Fabrication among all three countries increased at a healthy pace, with the United States accounting for 62% of total growth, followed by Mexico, which made up 33%. The strong U.S. dollar helped boost fabrication in Canada, which saw 11.5% growth, to total 0.7 Moz (22 t), after declining 12% in 2014. The stronger U.S. dollar had less of a beneficial impact on growth in Mexico (3%) because Mexico's export demand from the United States is a lower share of its total exports (80%) compared to Canada (86%) and because domestic consumption was weighed down. The peso depreciated 16% against the U.S. dollar, resulting in a 4% increase in silver prices locally.

Jewelry sales in the United States increased to an estimated 61.9 Moz (1,925 t) last year, up 8.3% from the previous year. Silver jewelry growth was curbed because consumers were drawn to gold's increased affordability. Silver particularly lost some favor within the higher-end segment of the market for this reason. That said the growth in silver jewelry consumption was largely driven by lower sticker prices, which encouraged increased purchases of pieces for gifting. Mother's Day was a particularly successful holiday for silver last year. In the two weeks, jewelry sales were 116% higher than average sales levels, according to The Retail Equation, a research and consulting company. Further, according to a market study commissioned by the Silver Institute's Silver Promotion Service, gifting accounted for 34% of silver jewelry sales last year compared to 30% in 2014 and 25% in 2009.

Jewelry imports to the United States from Thailand, the largest import source, increased 17% to total 25.2 Moz (784 t). Thailand's share of total imports rose from 41% in 2014 to 44% last year, the highest on record. Declining silver prices since the middle of 2011 have raised the focus among global competitors on manufacturing costs. In contrast, as silver prices were rising from 2005 through early 2011, silver's presence in the luxury and branded jewelry segments increased. Rising gold prices in the period pushed gold jewelry out of a large segment of price brackets, diverting consumers toward silver jewelry. Lower gold prices more recently have made gold jewelry more affordable once again and consumers have since lost interest in silver within the branded and luxury segments. Silver as a result has reverted to its core jewelry category, that of costume and daily pieces. As such, price is a dominant driver of demand. This feature has been well evidenced by Thailand's growth in share of imports.

THE CHANGING FACE OF SILVER JEWELRY

Lower sticker prices aided silver jewelry offtake in several price sensitive markets last year as the 18% drop in the silver price enabled retailers to offer greater options at critical price points. Global silver consumption rose just 1% last year, despite the lower price environment, as the industry as a whole faced a myriad of challenges that curbed further growth. In industrialized markets, which are dominated by North America and Europe, demand for silver lost favor among some consumers last year, mainly due to gold's increased affordability and growth within the yellow colored segment. Additionally, there has also been a notable swing away from heavy branded silver jewelry, a feature of the fashion industry in recent years, especially at the high-end of the market, to smaller more intricate designs, gemset pieces and daily wearables. While these designs offer retailers impressive margins, these changing consumer trends saw silver offtake, in volume terms, subside in some segments.

Indeed, according to a survey commissioned by the Silver Institute's Silver Promotion Service, five times as many retailers rated silver as giving the best maintained margin than gold in 2015. This, not surprisingly, has encouraged retailers to expand their silver jewelry offerings. Survey results from this report reinforced several of our own findings. According to their findings, 57% of retailers in the United States increased their silver inventory in 2015, by an industry average of 21%. The female self-purchasing market remained the most significant sales opportunity for nearly 50% or survey respondents, with buyers from the 20-40 age bracket the dominant target for sales opportunities.

Jewelry styles and designs offered across the broader retail and fashion industries have shifted in the last twelve months due largely to changing consumer tastes and price point availability. Growth in 2014 was dominated by the plain sector with branded items such as wrist cuffs, pendants, and large rings. Last year, silver was more understated, with simple elegant designs, aimed at the daily wear market, gaining the most traction. Another exciting development has been the introduction of companies trying to merge fashion and technology; whereby bracelets or pendants have chips inserted that track activity, buzz when you receive a call or text, and, interestingly, sends out an alert with your location if you feel unsafe.

Clockwise from top: Bracelet in sterling silver by **Kelim Jewelry Design**, Woven diamond ring in sterling silver by **Ariva Fine Jewelry**, Earrings in sterling silver by **Frederic Duclos**, Cubic cuff in sterling silver by **Paz Collective**

Further, Italy's share of United States imports continued to dwindle, standing at 7% in 2015, down from 8% the previous year and down from a recent peak of 10% in 2010. Italy is a major source of higher-end silver jewelry for the United States.

The United States dollar's value increased 17% against a basket of currencies last year. This increased buying power encouraged wholesalers and retailers to purchase more silver jewelry from cheaper foreign sources, which negatively affected growth in purchases from domestic manufacturers. While jewelry consumption growth fell from 8.6% in 2014 to 8.3% in 2015, domestic fabrication growth slowed more rapidly from 11% in 2014 to 6.5% in 2015. Fabrication totaled 13.7 Moz (425 t) last year.

AFRICA

Egyptian jewelry fabrication was unable to hold on to the modest gain from the previous year, slipping 7% to 0.8 Moz (25 t) in 2015. The 10% drop in the domestic silver price was not sufficient to stimulate demand in a market that struggled with the weight of worsening political and economic uncertainty. A flare up in violent protests and the downing of a Russian airliner last year led to a marked drop in tourists which also impacted on local consumption.

ASIA

China's silver jewelry fabrication registered another steep decline in 2015, falling by 28% year-on-year, after already sliding by 26% in 2014. A deteriorating domestic

economy and a lack of confidence in the silver price outlook contributed to the weakness. The GFMS team at Thomson Reuters estimates that Chinese silver jewelry fabrication retreated to 33.9 Moz (1,053 t) last year, a drop of 29.0 Moz (902 t) from the 2013 record levels.

Despite the Chinese economy growing at a reported 6.9% in 2015, the true impact on the ground failed to reflect this robust performance. The major meltdown in the domestic equities market and a lack of faith in the economic outlook resulted in reluctant spending sentiment. As a result, gold, silver and platinum jewelry all recorded double digit percentage annual declines.

As we outlined in last year's report there was already an overcapacity of silver jewelry fabrication in the Chinese market. This glut, coupled with weak consumer demand and banks withdrawing their support on credit lines, resulted in significant failures and bankruptcies of fabricators across the country last year. Fabrication fees also dropped below 1 yuan/g (15 cents), the lowest level we can recall, although it has stabilized somewhat since the fourth quarter. Within the sector, silver bracelets, which usually contain more silver and are the mainstay of consumption (on average 20-30 grams of silver per item) are usually be given to new born babies, were hardest hit.

During the market downturn, fabricators are looking for ways to survive. One market trend to emerge in China in recent years has been the notable increase in the purity of the silver being offered. Prior to 2014, 925 sterling silver pieces were dominant within the sector. However, starting in 2014, a greater number of fabricators have shifted their focus to produce 990 purity. Starting last year, 999 silver items have been gaining in popularity and quickly gaining market share. Towards the end of last year, some fabricators started producing 9999 silver jewelry pieces to service this demand.

Looking at this year, industry participants are not overly optimistic on the outlook of the local silver jewelry market, although they believe that fabrication fees may have now stabilized and may begin to rebound in 2017 due to further industry consolidation. Their major concern is, unlike 2008, when the Chinese economy was hit hard but the recovery process was initiated quickly, this time many feel the downturn of the economic cycle will be a prolonged one, and indeed many believe it is more realistic to hope for the silver price to rebound (as many are sitting on large inventories) than a rapid recovery in consumer spending.

Indian jewelry fabrication increased by 16% to 72.4 Moz (2,254 t) in 2015 to the highest level on record and marked the fourth consecutive annual rise in demand. A rise in end consumption and demand for cash purchases as against exchange of old jewelry due to lower prices, helped drive volumes. While changing fashion trends made an important contribution, the low price point coupled with higher price expectations led to rampant stock building across the supply chain.

Fabrication demand for the most consumed products like anklets, leg chains and toe rings, primarily produced from Salem, Kolhapur, Ahmedabad and Rajkot, posted an average year-on-year increase of close to 18%. Our contacts also indicated that purity levels had also risen, from an average of 50% during the last decade to 70% in the last two years. Indeed, the purity level is likely to rise further in coming years due to design preferences among consumers.

The growth of fashion and plated jewelry over the last seven years has supported growth in silver jewelry as lower prices are leading to a switch for products with higher intrinsic value. Also key to note is that fashion products in silver jewelry are not entirely new for Indian consumers, who in recent years readily accepted the cubic zircona studded sterling silver jewelry, which attracts a markup of close to 50%,being carried to India from Hong Kong. These growing volumes have provided an opportunity for a rise in domestic fabrication, as previously thin volumes made it difficult to compete with imported jewelry. That said, Indian manufacturers may face competition from South Korea due to the Comprehensive Economic Partnership agreement through which jewelry can be imported at 2% customs duty. Higher mark-ups on South Korean items is likely to be a deterrent though.

Demand for sterling jewelry is estimated to be growing at a rate of more than 50% year-on-year, with volumes concentrated among a handful of fabricators and primarily from the city of Agra. The growth of e-commerce has helped broaden its reach in the last two years to a wider market. It is popular amongst working women and students, to an extent that due to higher gold prices and facing a risk of theft, there has been a gradual shift to silver earrings among school going students. Also driving

attention is the increased demand for filigree jewelry manufactured primarily in Karimanagar and Cuttack while antique jewelry is estimated to have grown at 10% last year. Looking ahead, one of the major challenges facing the industry will be the implementation of mandatory hallmarking of all silver jewelry, which is expected to be in place by later this year.

We estimate silver consumed for jewelry export at 7.8 Moz (243 t), a rise of 10% from 2014. In value terms it is estimated to have increased by 35% year-on-year, primarily driven from exports of precious stones, diamonds and gem-set segment, which enjoyed a rise of 51% last year. The growth story of this segment has run parallel with increased imports of silver over the last three years. However, investigation has revealed these exports were primarily a result of overvalued shipments as they included the usage of synthetic diamonds, while the silver content was at an average of just 4% of the total value.

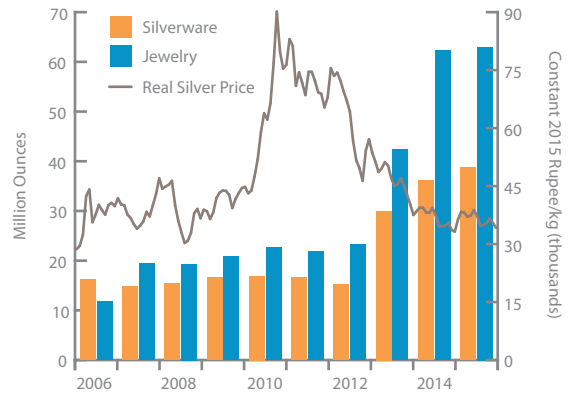
Thailand's silver jewelry fabrication increased by a healthy 16% last year to an estimated 21.8 Moz (677 t), a four year high following a 9% fall in 2014. At first glance this healthy increase would suggest that the Thai fabrication market as a whole enjoyed a solid year in 2015. However, in reality this was not case with the vast bulk of the increase attributed to only a handful of larger fabricators with many smaller and medium sizes businesses focused on exports finding it difficult to compete with China for basic items and the Koreans at the higher end of the market. Indeed, several of the smaller family run operations saw offtake decline last year, despite the 18% drop in the dollar silver price. In the last few years the Thai market has been supported by the rapid expansion of Danish company Pandora, which fabricates primarily in Thailand and is a significant consumer of silver. They sit easily as the largest fabricator in the country with a significant gap to second position. Last year it was the expansion of fabrication capacity of this branded product that helped lift Thailand's fabrication volumes and boosted exports. Moreover the company recently announced plans to double its production capacity in Thailand over the next three years.

Most of the larger fabricators in Thailand enjoyed a rebound in demand last year, particularly for those involved in producing branded jewelry under contract for European or United States fashion brands. The weaker domestic currency (the baht slumped to a six-year low) assisted fabricators profitably as labor charges are transacted in U.S. dollar or euros, but a trend to smaller understated branded fashion jewelry (as opposed to the large cuffs, rings, and pendants popular in 2014) last year impacted fabrication volumes.

Silver jewelry exports enjoyed a solid rise in 2015, increasing 13% on a gross weight basis. The United States remains the largest market for Thai fabricators, taking more than a third of the total volume. Shipments to this key market increased 17% last year while deliveries to Germany, Australia, and Hong Kong all registered double-digit gains. The only major market to contract last year was Russia with exports to this market down sharply.

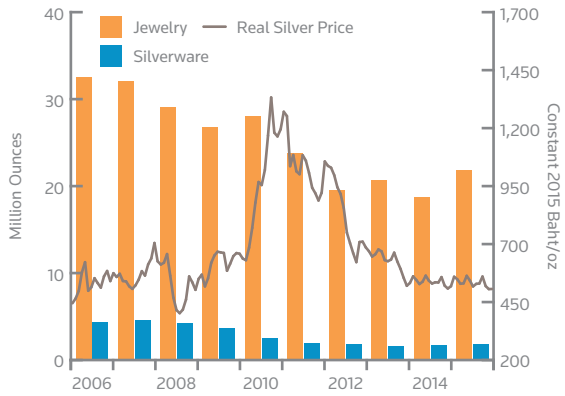
Domestically the retail market for silver jewelry has been expanding in recent years as younger generations are attracted by the lower prices and fashion designs. Demand

INDIAN JEWELRY AND SILVERWARE FABRICATION



Source: GFMS, Thomson Reuters

THAI JEWELRY AND SILVERWARE FABRICATION



Source: GFMS, Thomson Reuters

TABLE 9 - SILVER FABRICATION: JEWELRY (INCLUDING THE USE OF SCRAP)

(million ounces)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Europe										
Italy	28.2	25.8	22.6	21.3	21.8	16.5	15.1	15.9	17.8	18.4
Turkey	4.8	4.1	4.5	3.9	3.4	3.1	3.4	4.0	4.8	4.4
Germany	3.8	3.9	3.9	3.7	3.8	3.7	3.6	3.4	3.3	3.3
Russia	1.6	2.3	2.5	3.0	3.3	2.7	2.6	2.6	2.8	2.9
France	1.6	1.7	1.6	1.7	1.9	2.2	2.0	1.7	1.6	1.6
Spain	1.3	1.1	1.1	1.2	1.1	1.1	1.0	0.9	0.9	0.9
Poland	1.7	1.9	1.9	1.5	1.3	0.8	0.6	0.6	0.6	0.5
Greece	1.1	1.0	1.2	1.0	0.9	0.7	0.6	0.5	0.5	0.5
Sweden	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
UK	1.0	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3
Portugal	0.9	0.7	0.6	0.6	0.6	0.4	0.2	0.2	0.3	0.3
Denmark	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Switzerland	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Netherlands	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other Countries	0.8	0.8	0.8	0.6	0.6	0.6	0.6	0.5	0.6	0.5
Total Europe	***48.0***	***44.9***	***42.3***	***40.1***	***40.3***	***33.2***	***31.1***	***31.8***	***34.7***	***34.8***
North America										
Mexico	12.0	12.2	11.8	10.5	10.4	13.9	13.3	15.2	16.3	16.7
United States	13.5	12.9	12.0	10.7	12.0	11.1	10.3	11.6	12.8	13.7
Canada	1.0	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.6	0.7
Total North America	***26.4***	***26.0***	***24.6***	***22.0***	***23.2***	***25.8***	***24.3***	***27.5***	***29.7***	***31.1***
Central & South America										
Brazil	1.5	1.5	1.5	1.7	1.9	1.5	1.5	3.0	2.8	2.2
Peru	0.4	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6
Colombia	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3
Argentina	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3
Other Countries	1.4	1.4	2.0	2.7	2.6	1.9	2.0	2.6	2.7	2.6
Total C. & S. America	***3.8***	***3.8***	***4.4***	***5.3***	***5.6***	***4.4***	***4.5***	***6.8***	***6.8***	***6.0***
Asia										
India	11.9	19.4	19.3	20.8	22.7	21.8	23.3	42.3	62.2	72.5
China	30.3	34.3	36.1	40.0	46.4	54.4	56.6	62.9	46.7	33.9
Thailand	32.5	32.0	29.1	26.7	28.0	23.7	19.5	20.6	18.7	21.8
Indonesia	4.4	4.2	4.2	4.2	4.7	5.5	6.2	6.5	6.2	6.5
South Korea	4.0	4.2	4.1	4.2	4.7	5.2	5.4	5.5	5.0	5.6
Japan	1.9	2.1	2.0	2.1	2.2	2.2	2.3	2.4	2.2	2.2
Vietnam	1.0	1.1	1.2	1.2	1.4	1.4	1.4	1.4	1.5	1.6
Bangladesh	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.5	0.6	1.1
Nepal	1.0	1.1	1.1	1.2	1.1	1.1	1.2	0.7	0.7	0.8
Saudi Arabia	0.6	0.6	0.6	0.6	0.7	0.8	0.8	0.8	0.8	0.8
Cambodia	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.7	0.8
UAE	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.8	0.7	0.7
Malaysia	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.7
Pakistan	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.5
Sri Lanka	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4
Israel	0.4	0.5	0.5	0.4	0.4	0.3	0.3	0.4	0.4	0.4
Taiwan	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Iran	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3

TABLE 9 - SILVER FABRICATION: JEWELRY (INCLUDING THE USE OF SCRAP)

(million ounces)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Philippines	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Hong Kong	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2
Bahrain	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Syria	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
Myanmar & Laos	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Countries	0.8	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Total Asia	***93.5***	***104.7***	***103.4***	***106.8***	***118.1***	***122.4***	***123.1***	***149.2***	***150.1***	***152.1***
Africa										
Egypt	1.3	1.4	1.3	1.2	1.1	0.5	0.7	0.8	0.9	0.8
Morocco	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3
Tunisia	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other Countries	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5
Total Africa	**2.2**	**2.3**	**2.3**	**2.0**	**2.0**	**1.4**	**1.6**	**1.7**	**1.8**	**1.7**
Oceania										
Total Oceania	***0.7***	***0.7***	***0.7***	***0.7***	***0.7***	***0.8***	***0.8***	***0.8***	***0.8***	***0.9***
World Total	**174.5**	**182.3**	**177.6**	**176.9**	**190.0**	**187.9**	**185.4**	**217.8**	**224.0**	**226.5**

was hamstrung for large parts of the year,however, by poor consumer sentiment as an uncertain political environment and poor economic performance (Thailand's economy grew at just 2.8% last year) limited discretionary spending.

As was the case in 2014 the hardest hit sector last year was the low end of the market. Those fabricators producing small plain designs (less than three grams) have seen export orders decline over a number of years, not necessarily due to a drop in end-user demand but rather competition from rival countries. Traditionally this segment has been the mainstay of Thailand's fabrication industry, but the dominance in this area has been eroded as China and other emerging markets have invested in technology and shifted focus to exports .

Jewelry fabrication in **South Korea** registered 13% growth to a total of 5.6 Moz (174 t) in 2015. While the domestic economy remained fragile, the major consumers of this segment are mostly teenagers and younger generations in their early 20s, who are still often living with their families and rely on financial assistance from their parents. Fabricators also introduced more fashionable designs and lower price tags per piece in conjunction with lower silver purities, to push the market higher last year. The deteriorating domestic economy, however, may hinder the growth of this industry in 2016.

Jewelry fabrication in **Indonesia** returned to growth in 2015, after a brief hiatus in the growth trend in 2014, to reach a new record level of 6.5 Moz (203 t). The healthy 6% gain was primarily a function of a rise in domestic consumption which has continued to expand, especially in urban centers where silver is winning market share at the expense of white gold. Silver has historically not been favored by Indonesians as a store of wealth, but younger generations are moving away from this view and are instead more interested in the fashion alternatives and the competitive price of silver. Indonesia's economy grew at the slowest pace in six years, rising only 4.8% for the period. This slowdown had a greater impact on gold jewelry as consumers tightened purse strings while the lower entry point of silver benefitted fabrication volumes. Jewelry exports were also marginally stronger last year although it was far from uniform with impressive growth to Singapore offset by a slowdown in deliveries to Hong Kong and the United States.

SILVERWARE

- ***Global silverware fabrication increased for the third year in succession to an estimated 62.9 Moz (1,957 t) with lower prices and a healthy uptick in demand from India the catalyst for the rise.***

Global silverware fabrication enjoyed the third annual rise in succession to an estimated 62.9 Moz (1,957 t), a ten-year high. As was the case in 2014 much of the increase last year can be attributed to a 15% jump in demand from the Indian Sub-Continent to an all time high, which contributed almost two thirds of the global total. Elsewhere, the significant contraction in the silver price and an improved economic environment in western markets saw modest gains in several regions last year, while the ongoing anti-corruption crackdown accounted for the marked decline in China.

EUROPE

European silverware fabrication continued to decline in 2015, to 10.0 Moz (310 t), representing a drop of 4% year-on-year. To put this in perspective, the long-running decline had seen silverware offtake drop to only 46% of the total a decade ago. Much of the decline was due to a structural shift in societal habits such as the fall in gifting of silverware for family and religious holidays, which itself was a function of weak economic conditions, high silver prices, and increasing competition from other consumer goods.

Russian silverware fabrication continued to decline in 2015, falling by 7% to an estimated 4.1 Moz (127 t), the lowest since 2006. In addition to the continued structural shift in gifting culture away from traditional and heavyweight silverware towards other consumer goods, the economy and affordability issues played a paramount role last year. Worsening economic conditions and high silver prices in local terms contributed to lower silverware offtake last year.

Silverware fabrication in **Italy** continued to suffer, registering an 8% drop in 2015, to 1.8 Moz (54 t). This was mainly due to the continued shift in gifting culture away from expensive silverware towards other consumer goods such as branded accessories and technological gadgets. Weak economic conditions also contributed to lower demand. Meanwhile, **German** fabrication continued to drop, falling by 2% to 0.9 Moz (28 t) in 2015. Uptake has been constrained by fewer hotels reserving some of their budget towards the purchase of silverware. Domestic demand has been weak, also reflected in imports which more than halved compared to 2014. Exports of silverware on the other hand recorded a significant rise of 44%, as fabricators look towards foreign markets, such as Switzerland and Canada. **Turkish** silverware fabrication recorded a rise of 7% last year reaching, 1.5 Moz (46 t). Despite the domestic challenges that remain present in the country, we understand that Turkish fabricators have become more competitive abroad.

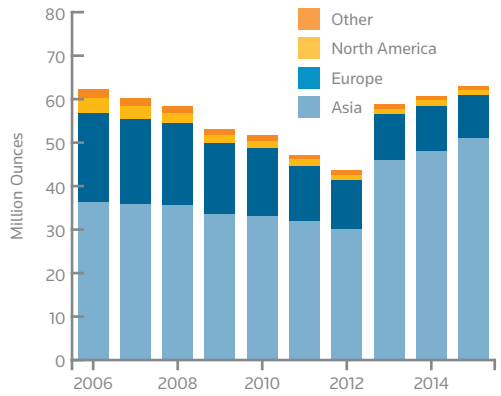
NORTH AMERICA

Unites States silverware fabrication was mostly flat in 2015, totaling 0.7 Moz (21 t). Last year's 0.1% increase comes after a 2.5% increase in 2014. The stronger U.S. dollar weighed on export demand and tourist purchases. All else equal, consumers continue to exhibit less and less interest in silverware; it has however retained some demand volume among a niche segment for gifting and special occasion purposes among the wealthier population.

ASIA

Indian silverware fabrication gained by 15% last year to 41.3 Moz (1,285 t), thereby rising to the highest level on record. This marked the third consecutive year of increase as fabricators increased their inventory level to take advantage of lower price levels. Domestic consumption, however, registered annual growth of "only" 17%, down from 35% growth seen in 2014, resulting in increased unsold stock.

WORLD SILVERWARE FABRICATION



Source: GFMS, Thomson Reuters

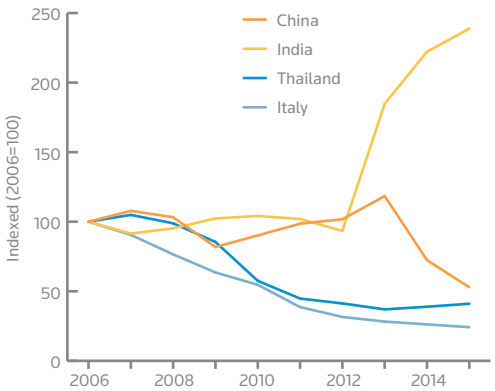
TABLE 10 - SILVER FABRICATION: SILVERWARE (INCLUDING THE USE OF SCRAP)

(million ounces)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Europe										
Russia	3.0	4.3	5.2	5.5	6.0	5.0	4.8	4.6	4.4	4.1
Italy	7.2	6.6	5.5	4.6	4.0	2.8	2.3	2.0	1.9	1.8
Turkey	2.4	2.1	2.2	1.8	1.5	1.3	1.1	1.2	1.4	1.5
Germany	2.9	2.7	2.3	1.6	1.6	1.4	1.1	0.9	0.9	0.9
Norway	0.9	0.6	0.7	0.5	0.5	0.4	0.4	0.4	0.4	0.4
Sweden	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Greece	1.4	1.2	1.0	0.8	0.6	0.5	0.3	0.3	0.3	0.3
Denmark	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
UK	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
France	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1
Finland	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other Countries	0.8	0.7	0.6	0.4	0.4	0.3	0.3	0.2	0.2	0.2
Total Europe	***20.3***	***19.7***	***19.0***	***16.3***	***15.7***	***12.8***	***11.3***	***10.6***	***10.3***	***10.0***
North America										
United States	1.4	1.4	1.0	0.9	0.8	0.8	0.7	0.7	0.7	0.7
Mexico	2.0	1.4	1.2	0.9	0.7	0.5	0.5	0.6	0.6	0.6
Canada	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total North America	***3.6***	***2.9***	***2.3***	***1.9***	***1.6***	***1.4***	***1.3***	***1.3***	***1.3***	***1.3***
Central & South America										
Colombia	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1
Peru	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Other Countries	0.7	0.7	0.7	0.6	0.5	0.4	0.4	0.4	0.3	0.2
Total C. & S. America	***1.3***	***1.3***	***1.2***	***1.0***	***0.9***	***0.8***	***0.8***	***0.7***	***0.6***	***0.5***
Asia										
India	16.2	14.9	15.5	16.6	16.9	16.6	15.2	30.0	36.1	41.3
China	8.4	9.1	8.7	6.9	7.6	8.3	8.6	10.0	6.1	3.5
Thailand	4.3	4.5	4.3	3.7	2.5	1.9	1.8	1.6	1.7	1.8
Israel	1.5	1.4	1.3	1.1	1.0	0.7	0.6	0.7	0.8	0.9
Iran	1.4	1.4	1.4	1.2	1.2	1.0	0.9	0.9	0.8	0.8
Bangladesh	0.8	0.7	0.7	0.7	0.6	0.6	0.5	0.4	0.4	0.5
Indonesia	0.7	0.6	0.6	0.7	0.7	0.6	0.5	0.4	0.4	0.4
Pakistan	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.4
South Korea	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.4	0.3
Sri Lanka	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.3	0.3
Nepal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Countries	1.2	1.2	1.2	1.1	1.0	0.9	0.8	0.8	0.7	0.7
Total Asia	***36.4***	***35.7***	***35.5***	***33.5***	***32.9***	***31.9***	***30.0***	***45.9***	***48.1***	***50.9***
Africa										
Africa	0.5	0.5	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.3
Total Africa	***0.5***	***0.5***	***0.5***	***0.5***	***0.4***	***0.3***	***0.3***	***0.3***	***0.3***	***0.3***
Oceania										
Australia	0.04	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02
Total Oceania	**0.04**	**0.04**	**0.04**	**0.03**	**0.03**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**
World Total	**62.1**	**60.2**	**58.4**	**53.2**	**51.6**	**47.2**	**43.7**	**58.8**	**60.7**	**62.9**

Gifting and personal consumption was a key driver in the category of kitchen utensils, lamps and candle stands which are normally mass produced and thus drive economies of scale for fabricators. Meanwhile, the fall in prices led to an increase in the mark-up for fabricators, rising from an average of 18% in 2013 to 25% last year, a very nominal rise, as on the other hand, the price decreased by 25% of the same period. This is in addition to the wide scale under-carating which becomes a large source of income for those manufacturers involved in the cottage industry model. However, this has not been the case for all, with some of the professionally managed manufacturers accelerating in this space and winning market share. This has been possible as consumers are very conscious on the purity front and are showing a willingness to pay the additional cost. This awareness is mainly in the upper strata of society and is slowly trickling down to the middle class. Demand for silver articles like statues and decorative pieces for the home continued to see a phenomenal growth due to rising income levels.

After recording a 39% decline in 2014, **Chinese** silverware fabrication fell another 43% to an estimated 3.5 Moz (109 t) in 2015. This particular sector has been hit hard since the middle of 2013 when the government tightened up its anti-corruption policy, which has heavily discouraged gifting activities in the country. Decorative statues, which generally consume more silver, were the dominant segment in the Chinese market during 2012-2013. This segment was negatively affected, however, by the suppression of the gifting culture, and hence silverware fabricators switched their focus to silver teapots and cups, which in general require 500-600 grams of silver per set. While initially this new product was well received, an oversupply was flushed into the market, and as a result, consumer interest quickly waned. Domestic silverware fabricators, wholesalers and retailers are all now sitting on a high level of inventories with this impacting on fresh fabrication volumes. Industry consolidation will continue in 2016, and fabricators are actively developing new products, hoping to facilitate market demand. While the outlook remains poor, some industry participants believe that an uptick in silver price may help demand.

MAIN GLOBAL SILVERWARE FABRICATORS



Source: GFMS, Thomson Reuters

Thailand's silverware fabrication benefited from the lower silver price in 2015, rising 6% to an estimated 1.8 Moz (55 t). This marks the second consecutive annual rise in offtake and follows a six-year period when Thai demand slumped by more than 4.5 Moz (91 t) as higher silver prices, societal trends, and an economic slowdown in western markets drove demand sharply lower. Despite the modest recovery in 2015 this segment as a whole has seen considerable consolidation in recent years as many small family run operations have been forced out of the industry. Indeed, Thai fabrication demand last year was more than 60% below the level of 2007. Domestic demand was broadly flat last year. While lower silver prices helped, demand was hamstrung for large parts of the year by poor consumer sentiment as an uncertain and often volatile political environment limited discretionary spending and impacted tourism. One of the key drivers for the rise last year was the rebound in export demand, which according to available trade data rose almost 14% last year, aided by stronger demand from Europe.

Silverware production in **Israel** enjoyed a modest rise in 2015, the third consecutive increase, as the lower price ensured the trend towards heavier items and away from plated was maintained. Exports to the largest market for Judaic items, the United States, were moderately stronger with an improved economy central to the rise. On the domestic front, demand for menorahs, candle-sticks, and other religious articles was broadly steady with the lower silver price having only limited impact at the retail level. Total fabrication is estimated to have increased 12% to 0.9 Moz (27 t), its highest level since 2010.

9. APPENDICES

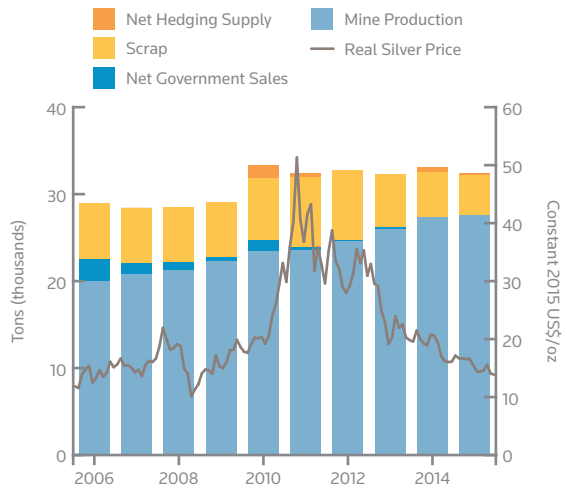
APPENDIX 1

WORLD SILVER SUPPLY AND DEMAND

(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Supply										
Mine Production	20,011	20,769	21,297	22,312	23,422	23,563	24,596	25,621	27,006	27,579
Net Government Sales	2,441	1,322	949	486	1,375	374	229	245	-	-
Old Silver Scrap	6,441	6,351	6,283	6,257	7,077	8,133	7,948	5,974	5,235	4,545
Net Hedging Supply	-362	-750	-269	-541	1,569	381	-1,464	-1,081	521	244
Total Supply	**28,532**	**27,692**	**28,259**	**28,513**	**33,442**	**32,451**	**31,309**	**30,759**	**32,762**	**32,367**
Demand										
Jewelry	5,429	5,670	5,524	5,502	5,909	5,846	5,767	6,774	6,967	7,045
Coins & Bars	1,578	1,743	5,982	2,849	4,492	6,545	4,991	7,531	7,343	9,092
Silverware	1,933	1,873	1,818	1,654	1,606	1,467	1,359	1,830	1,887	1,957
Industrial Fabrication	20,183	20,560	20,427	16,875	20,228	21,035	19,129	19,257	19,011	18,311
...of which Electrical & Electronics	7,537	8,165	8,451	7,072	9,367	9,044	8,295	8,274	8,192	7,672
...of which Brazing Alloys & Solders	1,701	1,814	1,916	1,666	1,895	1,951	1,884	1,965	2,057	1,902
...of which Photography	4,423	3,638	3,054	2,377	2,098	1,905	1,687	1,569	1,508	1,452
...of which Photovoltaic*	-	-	-	-	-	2,359	1,957	1,944	1,966	2,415
...of which Ethylene Oxide	207	245	231	148	272	194	148	239	154	317
...of which Other Industrial	6,316	6,698	6,777	5,612	6,596	5,581	5,157	5,266	5,134	4,553
Physical Demand	**29,123**	**29,846**	**33,751**	**26,880**	**32,235**	**34,893**	**31,246**	**35,392**	**35,208**	**36,405**
Physical Surplus/ Deficit	**-590**	**-2,154**	**-5,492**	**1,633**	**1,207**	**-2,442**	**63**	**-4,633**	**-2,445**	**-4,038**
ETP Inventory Build	3,944	1,704	3,152	4,880	4,027	-747	1,720	77	46	-549
Exchange Inventory Build	-279	669	-222	-475	-231	378	1,934	273	-273	10
Net Balance	**-4,256**	**-4,526**	**-8,421**	**-2,773**	**-2,589**	**-2,074**	**-3,591**	**-4,983**	**-2,218**	**-3,498**
Silver Price (London US$/oz)	**11.55**	**13.38**	**14.99**	**14.67**	**20.19**	**35.12**	**31.15**	**23.79**	**19.08**	**15.68**

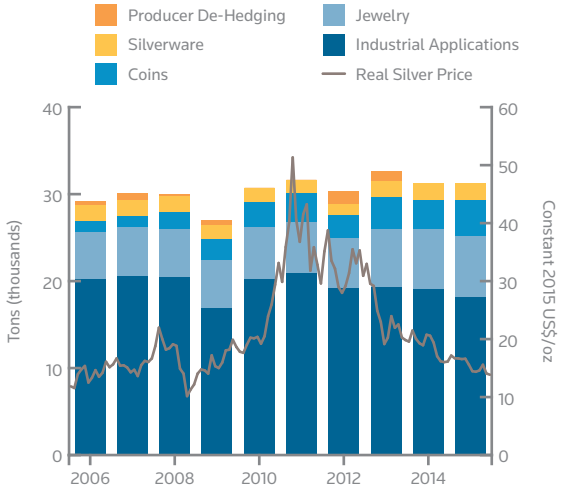
*Photovoltaic demand included in "Other Industrial" prior to 2011

WORLD SILVER SUPPLY



Source: GFMS, Thomson Reuters

WORLD SILVER DEMAND



Source: GFMS, Thomson Reuters

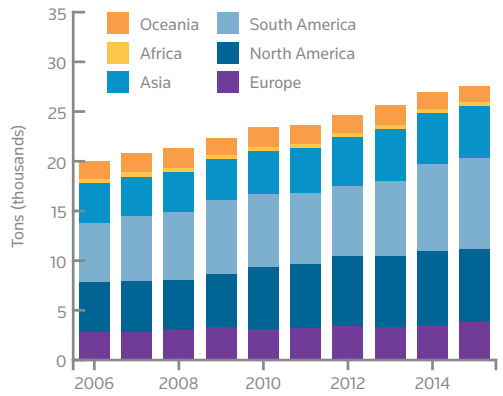
WORLD SILVER MINE PRODUCTION

(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Europe										
Russia	972	910	1,132	1,312	1,145	1,198	1,384	1,428	1,434	1,572
Poland	1,260	1,233	1,212	1,220	1,171	1,270	1,284	1,170	1,264	1,291
Sweden	266	294	263	270	285	283	306	337	396	494
Turkey	187	235	314	389	384	288	228	188	205	202
Portugal	20	28	41	22	23	31	34	45	54	74
Spain	2	2	2	5	23	33	37	41	40	40
Greece	25	35	35	29	27	25	30	29	27	32
Bulgaria	18	14	11	15	13	17	19	19	18	19
Macedonia	11	8	9	9	9	9	10	11	10	11
Ireland	5	5	9	5	4	6	10	8	6	6
Romania	15	3	0	3	7	12	9	9	3	3
Finland	0	0	0	0	0	0	0	3	2	3
Other Countries	3	2	1	1	2	2	1	1	1	1
Total Europe	**2,786**	**2,769**	**3,030**	**3,281**	**3,092**	**3,174**	**3,351**	**3,287**	**3,462**	**3,746**
North America										
Mexico	2,970	3,135	3,236	3,554	4,411	4,778	5,358	5,513	5,795	5,895
United States	1,140	1,260	1,120	1,250	1,280	1,120	1,060	1,040	1,180	1,100
Canada	969	829	669	609	573	582	685	640	493	380
Total North America	**5,079**	**5,225**	**5,026**	**5,412**	**6,264**	**6,480**	**7,104**	**7,193**	**7,468**	**7,374**
Central & South America										
Peru	3,471	3,539	3,739	3,971	3,691	3,473	3,547	3,754	3,821	4,227
Chile	1,607	1,936	1,405	1,301	1,287	1,291	1,195	1,174	1,574	1,505
Bolivia	472	525	1,114	1,326	1,259	1,214	1,206	1,281	1,345	1,306
Argentina	214	255	337	560	726	708	762	774	906	1,080
Guatemala	50	88	100	129	195	273	205	281	858	863
Dominican Republic	0	0	0	18	19	19	27	87	141	127
Honduras	56	54	59	58	58	49	51	51	57	35
Nicaragua	3	3	3	4	7	8	10	14	17	18
Ecuador	13	13	13	13	15	16	17	16	18	18
Brazil	10	11	11	12	12	12	12	15	15	17
Colombia	8	10	9	11	15	24	19	14	12	16
Venezuela	2	1	1	1	1	1	1	1	1	2
Other Countries	5	5	4	4	4	3	6	5	3	3
Total C. & S. America	**5,909**	**6,441**	**6,797**	**7,408**	**7,290**	**7,091**	**7,057**	**7,468**	**8,768**	**9,215**
Asia										
China	2,361	2,466	2,613	2,698	2,942	3,192	3,401	3,529	3,499	3,392
Kazakhstan	796	708	629	614	548	547	545	611	590	538
India	183	178	212	193	255	234	280	333	261	374
Indonesia	246	268	248	240	209	190	165	255	240	304
Armenia	40	52	43	41	51	74	90	105	115	117
Islamic Rep. of Iran	100	90	98	107	112	112	110	99	98	102
Mongolia	37	37	36	35	34	33	33	49	64	82
Uzbekistan	64	79	53	52	59	59	59	60	54	47
Dem. Rep. of Laos	6	4	7	15	17	18	20	32	40	41
Philippines	24	28	14	35	42	43	48	47	27	29
North Korea	29	29	29	25	26	27	27	28	28	26

WORLD SILVER MINE PRODUCTION

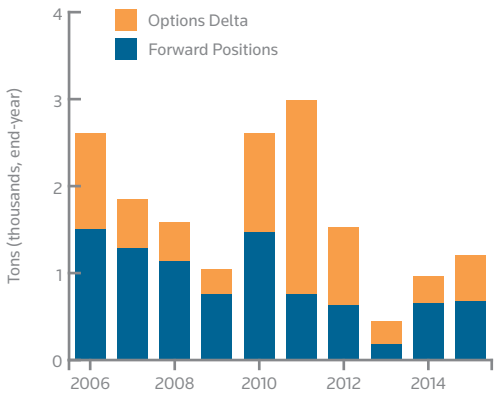
(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Thailand	17	13	13	21	23	24	38	36	34	24
Saudi Arabia	9	9	12	12	12	9	11	19	22	23
Japan	34	14	12	12	11	17	17	15	15	16
Kyrgyzstan	6	6	10	9	10	10	6	11	10	12
Tajikistan	1	1	1	1	1	2	2	3	3	4
Pakistan	2	2	2	2	3	3	3	3	3	3
Other Countries	2	2	2	2	6	6	6	2	2	3
Total Asia	**3,956**	**3,986**	**4,034**	**4,112**	**4,360**	**4,601**	**4,858**	**5,239**	**5,105**	**5,136**
Africa										
Morocco	241	224	251	270	326	257	258	282	274	296
Eritrea	0	0	0	0	0	4	23	25	47	70
South Africa	87	70	75	78	79	73	67	69	37	35
Zambia	10	11	12	14	15	15	15	16	15	15
Burkina Faso	0	0	0	0	0	0	1	1	13	12
Tanzania	12	11	9	11	12	13	13	12	12	12
Botswana	4	4	5	5	5	5	7	10	10	5
Zimbabwe	3	2	2	2	3	3	4	4	4	4
Ethiopia	1	1	1	2	2	3	3	3	3	3
Mali	3	3	2	3	2	2	3	3	2	3
Ghana	2	2	2	2	2	2	2	3	3	2
Dem. Rep. of the Congo	68	70	34	1	7	11	14	62	8	2
Other Countries	35	8	8	1	1	2	2	2	2	2
Total Africa	**465**	**406**	**403**	**386**	**455**	**392**	**412**	**491**	**431**	**461**
Oceania & Other										
Australia	1,728	1,879	1,926	1,631	1,880	1,725	1,727	1,840	1,675	1,566
Papua New Guinea	51	44	50	67	67	92	82	91	87	71
New Zealand	35	19	32	14	13	8	6	11	10	9
Total Oceania	**1,816**	**1,942**	**2,009**	**1,712**	**1,960**	**1,826**	**1,814**	**1,942**	**1,772**	**1,647**
World Total	**20,011**	**20,769**	**21,297**	**22,312**	**23,422**	**23,563**	**24,596**	**25,621**	**27,006**	**27,579**

WORLD SILVER MINE PRODUCTION



Source: GFMS, Thomson Reuters

SILVER PRODUCER HEDGING: OUTSTANDING POSITIONS



Source: GFMS, Thomson Reuters

SILVER FABRICATION: COINS AND MEDALS INCLUDING THE USE OF SCRAP

(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
United States	548	497	790	1,067	1,296	1,276	1,084	1,374	1,417	1,513
Canada	89	133	281	336	579	729	561	925	953	1,112
Australia	43	110	182	201	272	350	201	283	245	384
China	50	81	88	94	46	128	141	193	185	331
India	0	0	0	0	0	58	58	169	195	278
Austria	17	17	259	296	360	571	285	458	149	233
United Kingdom	13	14	16	17	16	31	22	68	60	98
Germany	272	195	223	232	200	102	35	20	20	63
Mexico	58	51	43	52	64	52	23	34	31	30
Japan	2	2	9	12	19	19	23	25	22	22
Other Countries	144	128	103	105	130	117	213	86	83	110
World Total	**1,235**	**1,228**	**1,994**	**2,413**	**2,983**	**3,433**	**2,647**	**3,635**	**3,360**	**4,172**

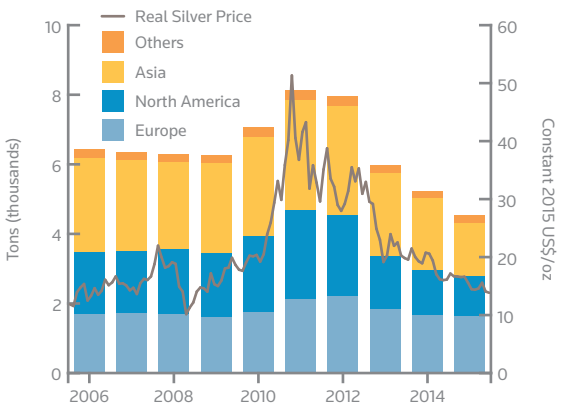
SUPPLY OF SILVER FROM THE RECYCLING OF SCRAP

(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Europe										
Germany	470	471	455	391	465	519	672	537	446	464
Russian Federation	262	274	258	261	356	346	340	311	320	311
Italy	170	175	183	181	203	303	309	270	245	212
United Kingdom	340	348	340	316	198	350	305	223	173	182
France	139	142	158	170	193	217	182	161	153	151
Turkey	35	30	36	33	32	36	32	32	46	53
Austria	40	38	36	33	35	38	37	36	34	35
Czech Republic	23	27	27	28	37	48	51	45	42	33
Poland	21	23	22	23	28	35	36	31	29	31
Netherlands	40	35	34	32	35	38	39	27	25	27
Spain	13	12	14	16	23	40	41	35	32	25
Sweden	29	28	27	26	26	28	28	22	20	21
Belgium	20	20	19	18	20	21	22	15	15	14
Portugal	13	13	12	12	12	14	14	11	10	13
Denmark	16	16	15	14	16	17	16	13	12	12
Slovakia	5	6	5	6	7	10	11	9	8	10
Hungary	5	6	6	6	8	11	11	10	9	9
Finland	11	11	10	10	10	11	11	9	8	8
Norway	9	8	9	9	10	10	10	8	7	8
Other Countries	27	29	28	27	28	29	29	24	22	22
Total Europe	**1,689**	**1,711**	**1,694**	**1,612**	**1,742**	**2,122**	**2,197**	**1,831**	**1,656**	**1,640**
North America										
Mexico	1,656	1,666	1,724	1,692	2,015	2,375	2,143	1,457	1,252	1,099
United States	44	50	52	48	51	56	51	34	30	27
Canada	72	84	95	98	123	140	145	35	14	14
Total North America	**1,772**	**1,800**	**1,871**	**1,838**	**2,189**	**2,571**	**2,339**	**1,526**	**1,296**	**1,139**
Central & South America										
Brazil	32	32	32	34	46	78	79	62	59	72
Venezuela	8	8	8	8	10	11	10	12	11	13

SUPPLY OF SILVER FROM THE RECYCLING OF SCRAP

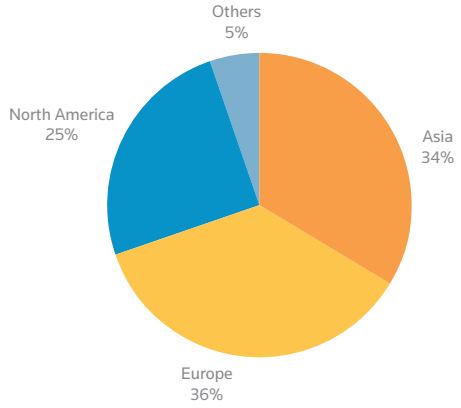
(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Uruguay	6	6	6	5	8	13	12	11	11	12
Other Countries	59	52	48	44	58	68	66	45	30	32
Total C.&S. America	**105**	**98**	**94**	**91**	**122**	**170**	**167**	**131**	**111**	**128**
Asia										
Japan	810	800	736	662	649	714	662	623	609	542
China	636	700	705	787	909	992	962	935	830	501
S Korea	240	242	240	262	294	310	281	262	215	126
Taiwan	88	91	97	111	129	140	133	113	97	85
India	705	502	429	465	558	642	771	169	92	79
Thailand	80	85	91	96	115	116	99	87	69	62
Saudi Arabia	56	58	59	60	69	73	68	64	58	52
Israel	12	13	13	13	16	17	16	13	14	13
Singapore	16	16	15	15	17	18	17	16	14	12
Kazakhstan	7	7	7	7	9	9	9	8	8	10
Indonesia	12	12	12	12	13	15	14	13	11	9
Uzbekistan	7	7	7	7	9	9	9	8	8	9
Vietnam	11	12	12	11	12	12	11	10	9	8
Other Countries	50	50	50	53	61	69	66	53	36	29
Total Asia	**2,729**	**2,594**	**2,474**	**2,561**	**2,861**	**3,137**	**3,120**	**2,374**	**2,069**	**1,538**
Africa										
Morocco	29	28	29	31	32	35	35	31	29	30
Egypt	46	48	51	55	62	27	23	21	20	18
Other Countries	18	18	18	18	20	22	22	19	18	19
Total Africa	**93**	**94**	**99**	**105**	**114**	**84**	**80**	**71**	**66**	**67**
Oceania										
Australia	53	52	51	49	49	49	45	41	37	33
Total Oceania	53	52	51	49	49	49	45	41	37	33
World Total	**6,441**	**6,351**	**6,283**	**6,257**	**7,077**	**8,133**	**7,948**	**5,974**	**5,235**	**4,545**

WORLD SILVER SCRAP SUPPLY



Source: GFMS, Thomson Reuters

WORLD SCRAP SUPPLY, 2015



Source: GFMS, Thomson Reuters

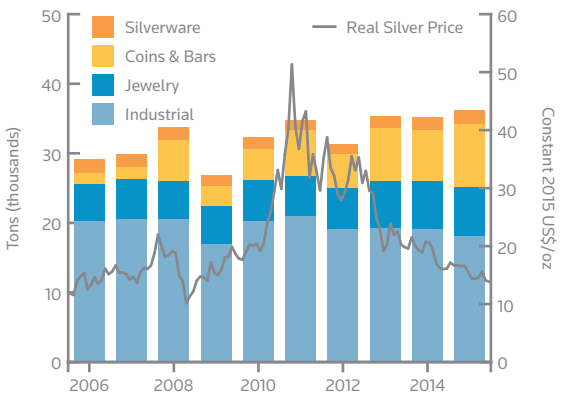
WORLD SILVER FABRICATION INCLUDING THE USE OF SCRAP

(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Europe										
Germany	1,331	1,348	1,546	1,503	1,690	1,488	1,204	1,205	1,003	1,066
Italy	1,449	1,359	1,226	1,088	1,109	886	808	820	875	885
Russian Federation	826	902	930	854	944	864	845	832	793	742
United Kingdom	1,013	779	725	588	677	698	631	641	623	659
France	413	465	597	633	697	633	544	551	415	446
Belgium	931	876	768	613	577	519	487	449	447	440
Austria	38	38	279	315	380	591	304	476	168	251
Turkey	276	247	262	221	201	181	184	209	241	234
Czech Republic	74	84	91	71	84	89	94	99	102	99
Switzerland	94	94	94	86	92	92	89	88	86	85
Spain	156	141	118	112	109	96	83	76	81	80
Netherlands	69	70	66	58	63	61	61	62	56	55
Poland	92	97	99	82	77	58	48	48	49	48
Norway	52	40	40	30	33	34	34	32	30	28
Sweden	37	35	34	29	39	28	28	27	28	27
Greece	77	70	68	56	46	36	28	24	25	24
Hungary	8	8	10	8	8	8	8	4	5	22
Denmark	21	21	20	18	19	18	18	16	17	17
Portugal	39	31	25	25	25	17	12	11	12	13
Other Countries	49	42	42	22	29	31	33	29	28	27
Total Europe	**7,045**	**6,747**	**7,041**	**6,411**	**6,898**	**6,427**	**5,541**	**5,699**	**5,084**	**5,249**
North America										
United States	5,778	5,575	6,137	5,664	6,754	7,130	6,407	6,424	6,972	7,510
Canada	178	250	386	404	667	813	644	1,031	1,061	1,228
Mexico	587	576	545	504	556	689	657	729	763	811
Total North America	**6,543**	**6,401**	**7,067**	**6,572**	**7,977**	**8,633**	**7,708**	**8,183**	**8,796**	**9,550**
Central & South America										
Brazil	145	223	218	219	319	345	349	413	356	328
Dominican Republic	19	20	28	46	42	28	29	42	45	47
Argentina	60	56	43	34	39	39	38	40	39	36
Colombia	21	21	19	17	18	17	17	24	35	32
Peru	22	21	23	25	26	22	22	23	24	23
Other Countries	67	68	85	103	103	80	82	98	99	97
Total C. & S. America	**316**	**389**	**388**	**399**	**504**	**503**	**509**	**598**	**554**	**516**
Asia										
India	2,522	2,878	5,776	1,777	2,822	4,477	3,119	5,756	6,579	7,640
China	4,711	5,402	6,013	5,843	6,792	7,534	7,711	8,448	7,808	6,865
Japan	4,097	3,912	3,272	2,105	3,010	3,220	2,906	2,977	2,843	2,929
Thailand	1,178	1,168	1,074	982	984	835	699	729	671	769
S Korea	842	903	955	763	929	941	928	895	820	685
Taiwan	438	534	533	397	486	510	463	471	488	470
Indonesia	178	170	168	166	199	225	245	254	243	254
Hong Kong	219	233	224	182	210	211	300	192	162	145
Iran	132	132	154	98	102	95	92	91	89	88
Israel	88	87	82	69	67	55	50	57	62	64
Singapore	3	3	3	6	60	63	23	30	35	61

WORLD SILVER FABRICATION INCLUDING THE USE OF SCRAP

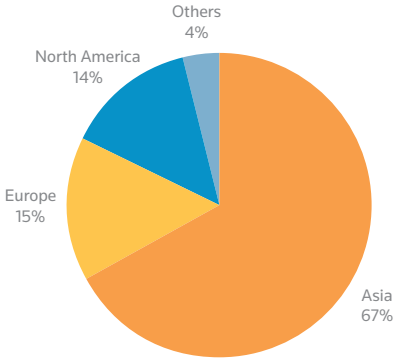
(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Saudi Arabia	64	64	29	190	192	98	55	60	55	56
Vietnam	35	37	39	40	45	46	46	45	49	51
Bangladesh	45	45	46	45	43	41	40	28	30	50
Other Countries	333	340	413	369	366	374	342	324	320	312
Total Asia	**14,885**	**15,909**	**18,782**	**13,034**	**16,306**	**18,725**	**17,019**	**20,358**	**20,253**	**20,437**
Africa										
Egypt	52	53	49	44	43	19	27	29	32	29
Morocco	19	20	19	17	18	18	18	18	19	19
Tunisia	10	11	11	10	11	10	10	11	11	11
Mali	9	9	10	9	9	9	9	9	9	9
South Africa	8	8	8	8	8	8	8	8	8	8
Algeria	6	6	6	6	6	5	5	6	6	6
Other Countries	56	57	54	49	47	24	31	34	36	33
Total Africa	**108**	**112**	**109**	**98**	**99**	**74**	**81**	**85**	**89**	**85**
Oceania										
Australia	225	288	362	364	450	531	387	467	430	566
Other Countries	1	1	1	1	2	1	1	1	2	2
Total Oceania	**226**	**289**	**363**	**365**	**452**	**532**	**388**	**468**	**432**	**568**
World Total	**29,123**	**29,846**	**33,751**	**26,880**	**32,235**	**34,893**	**31,246**	**35,392**	**35,208**	**36,405**

WORLD SILVER FABRICATION



Source: GFMS, Thomson Reuters

WORLD SILVER FABRICATION, 2015



Source: GFMS, Thomson Reuters

SILVER FABRICATION: INDUSTRIAL APPLICATIONS INCLUDING THE USE OF SCRAP

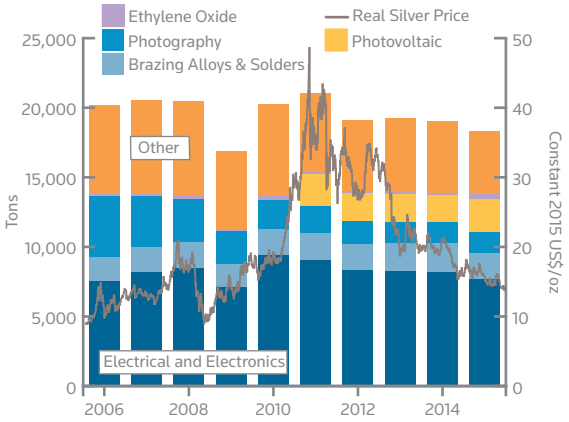
(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Europe										
Germany	813	859	853	632	824	791	673	664	651	651
United Kingdom	960	739	686	550	640	647	591	557	546	545
Russian Federation	674	689	681	582	630	602	593	599	565	515
Belgium	919	863	758	603	568	510	478	444	443	435
Italy	340	352	350	281	307	287	267	261	260	250
France	322	334	336	232	274	248	223	218	211	213
Czech Republic	67	76	83	64	76	82	88	93	97	95
Switzerland	77	77	76	69	75	74	71	70	72	71
Turkey	48	50	51	42	44	46	45	46	48	50
Netherlands	49	49	49	40	47	46	45	44	45	44
Spain	58	59	58	53	55	45	38	35	36	36
Poland	23	24	25	21	23	22	22	22	23	24
Austria	17	17	17	15	16	16	16	16	15	16
Norway	17	16	15	11	13	12	12	12	12	12
Sweden	11	11	11	8	10	9	9	9	9	9
Romania	11	7	7	-3	6	6	6	6	6	6
Hungary	3	3	3	3	3	3	3	3	3	3
Portugal	3	3	3	3	3	3	3	3	3	3
Slovakia	3	3	3	2	2	0	3	3	3	3
Other Countries	11	11	11	5	6	10	10	10	9	9
Total Europe	**4,425**	**4,241**	**4,074**	**3,214**	**3,620**	**3,458**	**3,195**	**3,114**	**3,056**	**2,990**
North America										
United States	4,765	4,636	4,649	3,868	4,702	5,175	4,126	3,963	3,850	3,940
Mexico	95	102	97	97	148	187	206	205	209	245
Canada	53	83	75	40	60	57	56	59	56	5
Total North America	**4,913**	**4,821**	**4,821**	**4,006**	**4,910**	**5,419**	**4,388**	**4,227**	**4,115**	**4,239**
Central & South America										
Brazil	91	169	161	142	177	168	165	148	140	128
Argentina	48	42	31	24	28	28	27	27	26	25
Colombia	5	5	5	4	5	4	4	9	19	17
Other Countries	14	14	14	13	14	13	13	13	13	13
Total C. & S. America	**158**	**230**	**211**	**183**	**223**	**214**	**210**	**196**	**198**	**183**
Asia										
China	3,455	3,972	4,525	4,251	4,876	5,104	5,145	5,590	5,788	5,252
Japan	4,034	3,844	3,201	2,028	2,921	3,133	2,811	2,877	2,751	2,839
India	1,368	1,455	1,486	1,415	1,575	1,676	1,553	1,468	1,373	1,256
South Korea	694	750	806	612	762	761	733	694	636	480
Taiwan	423	518	518	382	470	492	445	453	471	452
Hong Kong	208	222	213	171	199	199	193	180	152	137
Iran	83	83	106	55	59	55	55	54	55	55
Singapore	0	0	0	4	55	58	16	22	26	51
Thailand	28	28	33	31	32	32	32	32	32	32

GFMS, Thomson Reuters / The Silver Institute

SILVER FABRICATION: INDUSTRIAL APPLICATIONS INCLUDING THE USE OF SCRAP

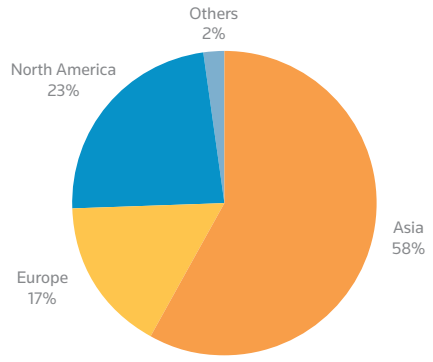
(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Indonesia	19	20	19	17	24	26	27	26	28	29
Other Countries	194	198	233	346	325	233	150	153	155	144
Total Asia	**10,505**	**11,090**	**11,140**	**9,312**	**11,298**	**11,769**	**11,159**	**11,549**	**11,466**	**10,727**
Africa										
Morocco	9	9	8	7	8	8	8	8	8	9
South Africa	4	4	4	4	4	4	4	4	4	4
Other Countries	10	10	11	9	11	9	9	9	9	9
Total Africa	**22**	**23**	**23**	**20**	**23**	**21**	**21**	**21**	**22**	**22**
Oceania										
Australia	159	156	158	140	154	154	157	150	154	150
Total Oceania	**159**	**156**	**158**	**140**	**154**	**154**	**157**	**150**	**154**	**150**
World Total	**20,183**	**20,560**	**20,427**	**16,875**	**20,228**	**21,035**	**19,129**	**19,257**	**19,011**	**18,311**

COMPONENTS OF INDUSTRIAL DEMAND



Note: Photovoltaic in "Other" category prior to 2011
Source: GFMS, Thomson Reuters

WORLD SILVER INDUSTRIAL FABRICATION, 2015



Source: GFMS, Thomson Reuters

SILVER FABRICATION: ELECTRICAL AND ELECTRONICS INCLUDING THE USE OF SCRAP

(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
China	1,391	1,667	1,893	1,722	2,058	2,148	2,161	2,343	2,419	2,173
United States	1,710	1,796	1,935	1,660	2,320	2,085	1,745	1,651	1,672	1,677
Japan	1,432	1,394	1,204	877	1,588	1,438	1,194	1,190	1,044	945
Germany	613	665	674	488	664	631	534	529	521	519
India	335	440	468	502	531	534	547	470	501	451
Taiwan	320	363	384	309	377	395	353	367	384	368
S Korea	430	456	495	390	500	499	481	453	415	310
Russian Federation	359	375	375	321	353	339	334	338	315	285
Mexico	61	65	64	69	118	157	177	176	179	213
France	254	264	269	178	215	189	166	164	159	161
United Kingdom	138	139	145	107	120	125	122	121	125	127
Italy	112	121	127	107	121	103	86	78	75	72
Hong Kong	101	108	104	83	97	97	94	87	72	66
Czech Republic	30	35	39	30	36	39	42	45	46	45
Brazil	27	48	46	37	50	49	48	47	45	42
Turkey	32	33	34	28	29	31	29	29	30	31
Australia	23	23	22	20	21	22	21	21	20	21
Singapore	-	-	-	-	6	9	10	15	19	21
Other Countries	170	174	174	144	163	155	151	152	150	144
World Total	**7,537**	**8,165**	**8,451**	**7,072**	**9,367**	**9,044**	**8,295**	**8,274**	**8,192**	**7,672**

SILVER FABRICATION: BRAZING ALLOYS AND SOLDERS INCLUDING THE USE OF SCRAP

(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
China	604	664	805	826	890	949	975	1,079	1,169	1,037
United States	224	240	225	162	182	187	166	178	182	187
India	70	68	67	68	80	83	75	65	82	77
UK	95	76	72	57	72	76	67	66	68	69
Germany	105	112	107	71	87	86	70	68	66	65
Japan	122	123	114	70	105	94	77	71	63	59
Russia	60	62	62	54	59	56	56	56	55	51
South Korea	64	74	81	64	72	73	68	64	59	50
Canada	46	76	68	34	53	53	49	49	48	49
Italy	74	78	75	52	57	54	50	48	47	45
Switzerland	44	44	42	38	41	41	39	39	40	39
Taiwan	39	39	39	31	38	39	38	36	35	34
Brazil	26	26	25	27	30	31	30	30	29	26
Australia	17	17	17	15	16	18	18	17	17	16
France	26	27	26	17	20	19	17	16	16	16
Belgium	20	20	19	18	20	21	22	15	15	14
Mexico	15	16	14	12	13	12	12	12	12	14
Czech Republic	7	9	10	7	9	10	10	11	12	11
Other Countries	44	44	48	42	51	48	45	44	44	43
World Total	**1,701**	**1,814**	**1,916**	**1,666**	**1,895**	**1,951**	**1,884**	**1,965**	**2,057**	**1,902**

SILVER FABRICATION: PHOTOGRAPHIC USE INCLUDING THE USE OF SCRAP

(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
United States	1,442	1,071	875	728	630	556	521	498	476	459
Belgium	880	836	730	580	540	482	448	423	420	415
Japan	1,251	1,080	908	610	465	410	303	295	290	275
United Kingdom	572	368	308	268	280	292	260	229	207	201
China	157	143	115	95	81	74	69	60	56	49
Russia	76	64	56	47	42	38	37	36	34	32
India	10	10	10	10	10	10	10	10	10	10
Brazil	-	45	40	32	45	37	35	14	10	8
Czech Republic	6	5	4	4	3	3	3	2	2	2
Australia	4	4	3	3	3	2	2	2	2	2
Other Countries	25	12	4	0	0	0	0	0	0	0
World Total	**4,423**	**3,638**	**3,054**	**2,377**	**2,098**	**1,905**	**1,687**	**1,569**	**1,508**	**1,452**

SILVER FABRICATION: ETHYLENE OXIDE CATALYST USE INCLUDING THE USE OF SCRAP

(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
China	70	44	20	11	76	46	33	129	125	209
South Korea	-	1	63	37	-	3	1	49	6	37
Singapore	-	-	-	-	46	45	-	1	-	23
United States	-38	12	25	-69	2	1	39	22	3	13
Saudi Arabia	40	39	-	162	153	53	7	5	-	11
Thailand	28	20	4	12	-	2	-	-	-	6
Russia	-	1	9	1	-2	-6	-	1	3	4
Taiwan	27	74	41	3	2	11	13	3	1	3
Iran	30	29	52	1	6	1	1	-	1	2
Germany	8	29	-	1	1	1	1	1	-	2
India	-16	-7	1	-16	-1	2	20	20	1	1
Brazil	-	-	-	4	-	4	24	1	-	1
Canada	2	1	1	1	3	-	2	6	3	1
Japan	1	1	2	-4	2	-	2	-	2	1
Mexico	1	-1	-1	1	6	1	-	1	-	1
Other Countries	54	2	13	4	-21	30	4	1	8	1
World Total	**207**	**245**	**231**	**148**	**272**	**194**	**148**	**239**	**154**	**317**

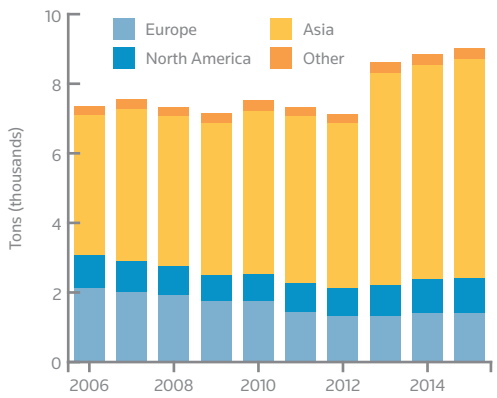
SILVER FABRICATION: JEWELRY AND SILVERWARE INCLUDING THE USE OF SCRAP

(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Europe										
Italy	1,101	1,006	875	806	802	599	540	559	614	627
Russia	144	205	241	263	291	240	228	225	223	218
Turkey	224	194	207	175	153	134	139	162	192	184
Germany	210	203	193	166	169	159	147	134	131	130
France	57	59	57	59	64	73	67	56	54	53
Spain	52	44	41	41	37	37	32	29	30	29
Greece	77	70	68	56	46	36	28	24	25	24
Sweden	26	24	22	20	20	19	19	18	18	18
Poland	55	62	62	49	41	24	19	20	19	17
Norway	34	25	26	19	20	18	18	16	17	16
United Kingdom	41	26	23	21	21	20	18	16	17	16
Denmark	18	18	17	15	16	16	15	14	15	15
Portugal	31	24	21	22	21	14	9	8	9	9
Netherlands	8	8	8	8	8	7	7	7	7	7
Switzerland	7	7	7	7	7	7	7	7	7	7
Belgium	5	5	5	4	4	4	4	4	4	4
Czech Republic	5	5	5	4	5	4	3	4	4	3
Finland	10	7	7	5	5	5	5	4	3	3
Austria	4	4	4	3	3	3	3	3	3	3
Cyprus	6	6	5	3	3	3	2	1	2	2
Croatia	2	2	2	2	2	2	2	2	2	1
Serbia	2	2	2	2	2	2	2	2	2	1
Other Countries	6	5	5	5	5	4	3	3	3	3
Total Europe	**2,123**	**2,008**	**1,904**	**1,754**	**1,744**	**1,429**	**1,317**	**1,318**	**1,401**	**1,391**
North America										
Mexico	434	423	404	355	344	450	428	490	523	537
United States	465	442	404	362	400	370	342	381	420	446
Canada	36	34	30	28	28	27	26	26	23	25
Total North America	**935**	**899**	**838**	**745**	**772**	**847**	**797**	**897**	**966**	**1,009**
Central & South America										
Brazil	54	54	54	57	64	50	50	95	90	67
Dominican Republic	19	20	28	46	42	28	29	41	43	46
Peru	19	18	19	22	23	19	19	21	21	20
Colombia	16	16	14	13	14	13	13	15	16	15
Argentina	12	14	12	10	11	11	11	13	13	12
Chile	10	10	10	10	10	9	9	12	12	12
Bolivia	9	7	14	16	14	9	9	10	9	9
Ecuador	10	10	10	7	7	7	7	9	10	9
Total C. & S. America	**157**	**157**	**173**	**195**	**202**	**161**	**163**	**231**	**229**	**200**
Asia										
India	874	1,065	1,082	1,164	1,233	1,194	1,196	2,248	3,058	3,539
China	1,206	1,348	1,392	1,457	1,681	1,952	2,029	2,266	1,642	1,162
Thailand	1,146	1,136	1,037	946	947	798	662	692	634	732
Indonesia	158	151	149	150	168	190	207	215	206	215
South Korea	149	153	149	150	167	179	183	186	167	185
Japan	61	65	62	65	70	69	72	75	70	69
Vietnam	35	37	39	40	45	46	46	45	49	51
Bangladesh	45	45	46	45	43	41	40	28	30	50

SILVER FABRICATION: JEWELRY AND SILVERWARE INCLUDING THE USE OF SCRAP

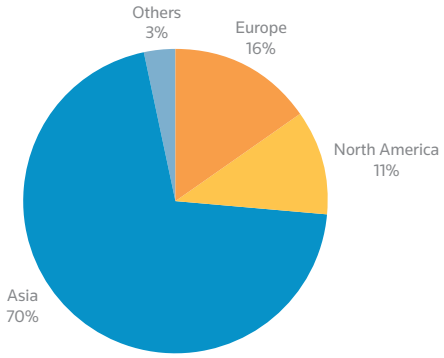
(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Israel	61	59	55	46	42	32	29	34	37	39
Iran	49	49	48	44	43	40	37	37	34	33
Cambodia	26	26	26	26	27	28	28	28	27	27
Saudi Arabia	21	22	22	23	24	26	28	28	27	26
Pakistan	32	32	32	31	28	24	23	20	20	26
Nepal	34	34	36	37	36	36	37	23	22	25
UAE	17	18	18	19	21	23	25	26	24	23
Malaysia	20	20	20	20	21	23	24	25	25	22
Sri Lanka	28	28	29	28	26	23	22	19	21	21
Taiwan	12	12	12	11	12	13	12	13	12	12
Philippines	8	8	8	8	8	8	9	9	9	9
Hong Kong	11	11	11	11	12	12	13	12	10	8
Bahrain	5	5	5	5	5	6	6	6	6	6
Other Countries	67	68	67	63	66	65	63	62	61	58
Total Asia	**4,039**	**4,368**	**4,319**	**4,362**	**4,698**	**4,799**	**4,764**	**6,067**	**6,163**	**6,312**
Africa										
Egypt	48	50	46	42	39	17	24	27	29	27
Morocco	11	11	11	9	10	10	10	10	10	10
Tunisia	9	10	10	10	10	9	9	10	10	10
Other Countries	17	18	18	17	17	16	17	17	18	17
Total Africa	**86**	**89**	**86**	**78**	**75**	**53**	**60**	**64**	**67**	**64**
Oceania										
Australia	24	24	23	23	25	26	27	28	28	29
Total Oceania	**24**	**24**	**23**	**23**	**25**	**26**	**27**	**28**	**28**	**29**
World Total	**7,362**	**7,543**	**7,342**	**7,156**	**7,515**	**7,313**	**7,126**	**8,603**	**8,854**	**9,002**

WORLD JEWELRY & SILVERWARE FABRICATION



Source: GFMS, Thomson Reuters

WORLD JEWELRY & SILVERWARE FABRICATION, 2015



Source: GFMS, Thomson Reuters

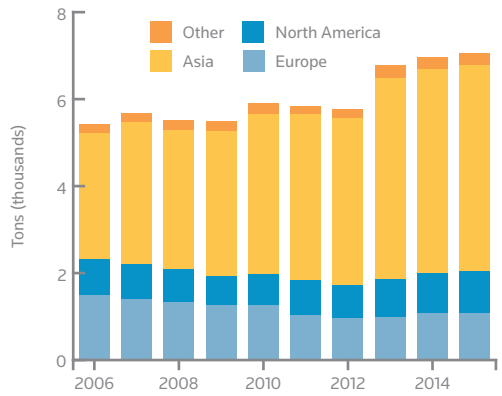
SILVER FABRICATION: JEWELRY INCLUDING THE USE OF SCRAP

(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Europe										
Italy	876	802	703	663	679	512	469	495	555	572
Turkey	150	127	139	120	105	95	105	124	149	137
Germany	119	120	122	115	119	115	113	104	103	102
Russia	51	70	79	92	104	84	80	82	87	91
France	50	52	49	54	59	68	63	53	51	50
Spain	40	35	35	38	34	35	30	27	29	27
Poland	53	60	61	48	41	23	18	19	19	17
Greece	33	32	36	32	28	22	18	16	17	16
UK	30	16	14	12	13	12	11	9	10	10
Sweden	12	11	10	9	10	9	10	10	10	10
Portugal	27	21	17	18	18	12	8	7	8	9
Denmark	8	8	8	7	7	7	7	7	7	7
Switzerland	7	7	7	7	7	7	7	7	7	7
Netherlands	7	7	7	7	7	6	7	6	6	6
Norway	5	5	4	5	5	5	5	5	5	4
Other Countries	25	24	25	20	20	18	17	16	17	16
Total Europe	**1,492**	**1,397**	**1,315**	**1,246**	**1,254**	**1,032**	**966**	**988**	**1,080**	**1,081**
North America										
Mexico	372	380	368	327	323	433	412	472	505	520
United States	420	400	372	334	374	346	321	361	399	425
Canada	30	28	26	24	25	24	23	23	20	22
Total North America	**822**	**808**	**766**	**685**	**722**	**803**	**757**	**856**	**925**	**967**
Central & South America										
Brazil	48	48	48	52	60	47	47	92	88	67
Dominican Republic	19	20	28	46	42	28	29	41	43	46
Peru	11	10	13	16	17	14	15	17	18	17
Colombia	6	6	6	7	7	7	7	10	12	10
Argentina	8	9	8	7	8	8	8	11	10	10
Other Countries	44	44	61	83	82	61	63	81	83	82
Total C. & S. America	**117**	**117**	**136**	**165**	**174**	**137**	**140**	**210**	**211**	**186**
Asia										
India	369	603	601	647	707	679	724	1,315	1,936	2,254
China	943	1,065	1,121	1,243	1,444	1,693	1,762	1,955	1,452	1,053
Thailand	1,012	995	904	832	870	738	607	642	582	677
Indonesia	137	131	129	129	146	172	192	201	192	203
South Korea	126	130	127	131	147	162	168	172	154	174
Japan	60	64	61	64	69	68	71	74	70	68
Vietnam	32	34	36	37	42	44	44	43	47	50
Bangladesh	22	22	23	24	23	23	24	16	17	33
Nepal	33	33	35	36	35	35	37	22	21	25
Saudi Arabia	18	18	18	20	21	23	25	26	25	24
Cambodia	19	19	19	19	22	23	24	24	23	23
Malaysia	19	18	19	19	20	21	23	24	24	21
UAE	15	15	15	16	18	20	22	24	22	21
Pakistan	12	13	13	14	13	11	11	10	10	15
Sri Lanka	15	15	16	17	16	14	14	12	13	13
Israel	13	14	14	12	13	10	10	11	13	12

SILVER FABRICATION: JEWELRY INCLUDING THE USE OF SCRAP

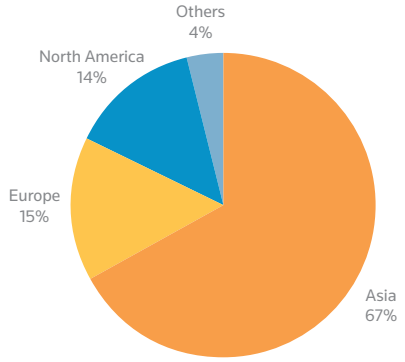
(tons)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Taiwan	9	9	8	8	9	10	10	10	9	10
Iran	6	6	6	6	7	8	8	9	9	8
Philipines	6	6	6	6	6	7	7	7	7	8
Hong Kong	8	8	8	8	9	10	11	10	8	7
Bahrain	4	4	4	4	5	5	5	6	5	6
Syria	6	6	6	6	7	6	5	4	3	2
Other Countries	26	27	26	23	24	23	24	25	25	24
Total Asia	**2,908**	**3,256**	**3,217**	**3,322**	**3,674**	**3,807**	**3,829**	**4,640**	**4,669**	**4,730**
Africa										
Egypt	41	43	40	36	34	15	22	24	27	25
Morocco	8	9	8	7	8	8	8	8	8	8
Tunisia	6	7	7	7	7	7	7	7	7	7
Other Countries	13	14	15	14	14	13	14	14	15	14
Total Africa	**69**	**72**	**70**	**64**	**62**	**43**	**50**	**54**	**57**	**54**
Oceania										
Total Oceania	**21**	**21**	**20**	**21**	**22**	**24**	**25**	**26**	**26**	**27**
World Total	**5,429**	**5,670**	**5,524**	**5,502**	**5,909**	**5,846**	**5,767**	**6,774**	**6,967**	**7,045**

WORLD JEWELRY FABRICATION



Source: GFMS, Thomson Reuters

WORLD JEWELRY FABRICATION, 2015

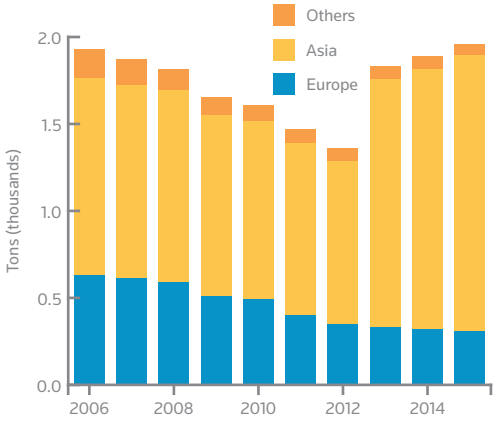


Source: GFMS, Thomson Reuters

SILVER FABRICATION: SILVERWARE INCLUDING THE USE OF SCRAP (TONS)

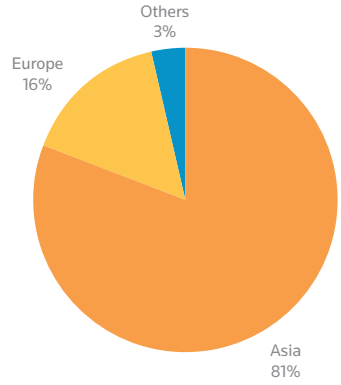
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Europe										
Russia	93	134	162	171	187	156	148	144	136	127
Italy	225	204	172	143	123	87	71	64	59	54
Turkey	74	67	68	55	48	39	34	38	43	46
Germany	91	83	71	51	51	44	34	29	29	28
Norway	29	20	21	14	15	14	14	12	12	12
Greece	44	38	32	24	18	14	10	8	8	8
Sweden	14	12	12	10	10	9	9	8	8	8
Denmark	10	10	10	9	9	9	8	7	7	7
UK	11	10	10	9	8	8	7	6	7	6
France	7	8	8	6	5	5	4	3	3	3
Finland	7	5	5	3	3	3	3	3	2	2
Other Countries	25	22	19	13	13	10	8	8	7	7
Total Europe	**631**	**612**	**589**	**508**	**490**	**397**	**350**	**330**	**322**	**310**
North America										
United States	45	42	32	28	26	24	21	20	21	21
Mexico	62	43	36	28	21	17	16	18	18	18
Canada	6	6	4	4	3	3	3	3	3	3
Total North America	**113**	**91**	**72**	**60**	**51**	**45**	**40**	**41**	**42**	**41**
Central & South America										
Colombia	10	10	8	7	7	6	6	5	5	4
Peru	8	8	6	6	6	4	4	4	3	3
Other Countries	22	23	22	17	15	13	13	11	10	7
Total C. & S. America	**40**	**41**	**36**	**30**	**27**	**24**	**23**	**21**	**18**	**14**
Asia										
India	505	462	481	517	526	515	472	933	1,122	1,285
China	262	283	271	215	237	259	267	311	190	109
Thailand	134	141	133	115	77	60	55	50	52	55
Israel	48	45	41	34	30	22	19	23	24	27
Iran	43	43	42	37	36	32	29	28	26	25
Bangladesh	24	23	23	21	20	17	16	13	12	17
Indonesia	21	20	20	21	22	18	15	14	14	12
South Korea	23	23	22	20	19	17	15	14	12	11
Pakistan	20	20	19	17	15	13	11	10	10	11
Sri Lanka	13	13	13	11	10	9	8	7	8	9
Nepal	1	1	1	1	1	1	1	1	1	0
Other Countries	37	38	37	33	32	28	26	25	23	21
Total Asia	**1,131**	**1,112**	**1,103**	**1,041**	**1,024**	**992**	**934**	**1,427**	**1,495**	**1,582**
Africa										
Africa	17	17	16	14	13	9	10	10	10	9
Total Africa	**17**	**17**	**16**	**14**	**13**	**9**	**10**	**10**	**10**	**9**
Oceania										
Australia	1	1	1	1	1	1	1	1	1	1
Total Oceania	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
World Total	**1,933**	**1,873**	**1,818**	**1,654**	**1,606**	**1,467**	**1,359**	**1,830**	**1,887**	**1,957**

WORLD SILVERWARE FABRICATION



Source: GFMS, Thomson Reuters

WORLD SILVERWARE FABRICATION, 2015



Source: GFMS, Thomson Reuters

TOP 20 SILVER PRODUCING COUNTRIES

Rank 2014	Rank 2015	Country	Output (tons) 2014	Output (tons) 2015
1	1	Mexico	5,795	5,895
2	2	Peru	3,821	4,227
3	3	China	3,499	3,392
6	4	Russia	1,434	1,572
4	5	Australia	1,675	1,566
5	6	Chile	1,574	1,505
7	7	Bolivia	1,345	1,306
8	8	Poland	1,264	1,291
9	9	United States	1,180	1,100
10	10	Argentina	906	1,080
11	11	Guatemala	858	863
12	12	Kazakhstan	590	538
14	13	Sweden	396	494
13	14	Canada	493	380
16	15	India	261	374
17	16	Indonesia	240	304
15	17	Morocco	274	296
18	18	Turkey	205	202
19	19	Dominican Republic	141	127
20	20	Armenia	115	117
		Rest of World	**940**	**953**
		World Total	**27,006**	**27,579**

Source: GFMS, Thomson Reuters

TOP 20 SILVER PRODUCING COMPANIES

Rank 2014	Rank 2015		Output (tons) 2014	Output (tons) 2015
2	1	Fresnillo plc. [1,2]	1,255	1,338
1	2	KGHM Polska Miedź S.A. Group [3]	1,258	1,293
3	3	Goldcorp Inc.	1,145	1,257
4	4	Glencore plc. [4]	1,105	1,139
6	5	Polymetal International plc.	893	998
7	6	Pan American Silver Corp. [2]	812	812
8	7	Volcan Cia. Minera S.A.A. [4]	700	771
11	8	Cia. De Minas Buenaventura S.A.A. [4]	611	694
9	9	Corp. Nacional del Cobre de Chile	635	663
10	10	Tahoe Resources Inc. [2,5]	631	635
5	11	BHP Billiton plc. [5,6]	1,056	598
12	12	Coeur Mining, Inc. [2]	535	495
14	13	Sumitomo Corp. [5]	441	493
13	14	Hochschild Mining plc. [7]	503	459
NA	15	South 32 Ltd. [2,5]	NA	434
20	16	Boliden A.B. [6]	323	418
16	17	Southern Copper Corp. [8]	404	413
23	18	Hindustan Zinc Ltd. [9]	261	374
19	19	Hecla Mining Company	345	361
15	20	Industrias Peñoles S.A.B. De C.V. [10]	438	358

1 Including 100% of Penmont mines, excluding silverstream; 2 Primary silver producer;
3 Reported metallic silver production; 4 Includes minority partners; 5 Estimate; 6 Metal in concentrate;
7 Includes 100% from Pallancata, includes Moris; 8 Mined silver; 9 Integrated refined metal;
9 Excludes 100% of Fresnillo plc.

Source: GFMS, Thomson Reuters

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
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	11.415	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	5.540	8,016	229.30	233	2,498	1,476	160	50.65
1999	5.218	8,022	197.38	191	1,994	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	441	6,024	3,223	339	198.30
2010	20.193	32,007	640.59	570	7,507	4,393	489	255.16
2011	35.119	55,638	1,069.25	900	12,508	7,296	811	436.30
2012	31.150	57,086	967.03	799	11,187	6,309	777	405.47
2013	23.793	48,618	730.53	743	8,366	4,708	576	303.52
2014	19.078	41,805	585.76	646	6,448	3,778	461	253.93
2015	15.680	36,146	537.10	610	5,704	3,168	560	248.91

* 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 (LOCAL CPI DEFLATED - CONSTANT 2015 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
1981	27.345	34,549	692.13	952	8,565	2,459	681	306.96
1982	19.458	32,314	523.84	790	6,479	2,021	525	335.53
1983	27.165	37,259	729.23	1,067	9,591	2,984	770	512.18
1984	18.580	35,047	528.75	744	6,941	2,430	599	307.94
1985	13.508	36,723	446.25	551	5,506	2,070	455	224.96
1986	11.818	35,670	378.66	345	4,838	2,028	300	256.20
1987	14.625	40,938	464.40	379	5,625	2,617	319	319.70
1988	13.093	45,613	409.00	311	4,347	2,052	286	229.27
1989	10.516	48,139	332.04	276	3,178	1,477	251	174.16
1990	8.765	43,990	274.60	247	2,711	1,600	185	138.04
1991	7.060	39,968	217.26	186	2,158	1,444	169	101.40
1992	6.666	38,708	201.94	168	2,102	1,368	147	87.57
1993	7.077	29,543	213.01	159	2,255	1,363	162	87.78
1994	8.451	29,834	247.05	178	2,603	2,011	190	108.94
1995	8.084	27,128	227.27	161	2,352	1,640	162	150.92
1996	7.857	26,426	218.75	186	2,339	1,507	168	133.02
1997	7.231	23,726	241.21	192	2,494	1,377	179	108.22
1998	8.055	23,968	333.53	233	3,868	1,570	204	121.94
1999	7.425	22,881	286.35	192	3,064	1,499	199	103.04
2000	6.817	21,939	283.65	173	2,705	1,419	215	88.29
2001	5.850	19,621	272.70	174	2,618	1,243	192	72.38
2002	6.060	20,119	275.75	191	2,598	1,318	189	74.96
2003	6.286	19,858	277.22	187	2,536	1,382	166	84.99
2004	8.355	24,977	357.06	238	3,211	1,816	202	115.89
2005	8.874	25,030	374.89	267	3,069	1,939	218	118.18
2006	13.579	37,933	533.12	444	4,420	2,935	337	180.16
2007	15.300	37,588	550.78	521	4,862	3,100	349	201.34
2008	16.501	39,910	564.24	505	6,170	2,996	355	218.46
2009	16.213	39,630	573.81	454	6,811	2,904	366	246.61
2010	21.950	47,563	707.21	590	8,243	3,831	523	304.66
2011	37.006	75,922	1,137.24	935	13,207	6,035	849	503.77
2012	32.158	71,286	998.69	830	11,559	5,084	798	449.69
2013	24.208	54,733	737.88	769	8,524	3,693	582	324.28
2014	19.101	44,247	581.03	652	6,494	2,909	462	260.82
2015	15.680	36,146	537.10	610	5,704	3,168**	560	248.91

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

**CPI Source: National Bureau of Statistics of the People's Republic of China

APPENDIX 4

SILVER PRICES IN US$ PER OUNCE

	London Silver Market Fix*			COMEX Settlement Price		
	High	Low	Average	High	Low	Average
1990	5.3560	3.9500	4.8316	5.3320	3.9370	4.8187
1991	4.5710	3.5475	4.0566	4.5450	3.5080	4.0355
1992	4.3350	3.6475	3.9464	4.3180	3.6400	3.9353
1993	5.4200	3.5600	4.3130	5.4430	3.5230	4.3049
1994	5.7475	4.6400	5.2851	5.7810	4.5730	5.2808
1995	6.0375	4.4160	5.1971	6.1020	4.3750	5.1850
1996	5.8275	4.7100	5.1995	5.8190	4.6760	5.1785
1997	6.2675	4.2235	4.8972	6.3350	4.1550	4.8775
1998	7.8100	4.6900	5.5398	7.2600	4.6180	5.4953
1999	5.7500	4.8800	5.2184	5.7600	4.8720	5.2142
2000	5.4475	4.5700	4.9525	5.5470	4.5630	4.9653
2001	4.8200	4.0650	4.3702	4.8050	4.0260	4.3597
2002	5.0975	4.2350	4.5990	5.1130	4.2160	4.5955
2003	5.9650	4.3700	4.8787	5.9830	4.3460	4.8916
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	11.5501
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	20.2382
2011	48.7000	26.1600	35.1192	48.5840	26.8110	35.2485
2012	37.2300	26.6700	31.1497	37.1400	26.2470	31.1459
2013	32.2300	18.6100	23.7928	32.4090	18.5330	23.7469
2014	22.0500	15.2800	19.0778	22.0470	15.3920	19.0304
2015	18.2300	13.7100	15.6800	18.3460	13.6660	15.6576

* "LBMA Silver price" as of 15 August 2014; operated by CME and administered by Thomson Reuters

US PRICES IN 2015

COMEX Settlement

US$ per ounce	High	Low	Average
January	18.3460	15.7340	17.2000
February	17.3790	16.1820	16.7202
March	17.1220	15.3450	16.1944
April	17.0950	15.6310	16.3201
May	17.7120	16.1110	16.7999
June	16.7830	15.5510	16.0133
July	15.7260	14.4770	15.0024
August	15.5170	14.0450	14.8940
September	15.2160	14.3190	14.7258
October	16.2880	14.5060	15.7925
November	15.4130	14.0080	14.4062
December	14.5050	13.6660	14.0506

Source: COMEX

LEASE RATES, 2015*

Monthly Averages

Average	3-month	6-month	12-month
June	-0.13%	-0.06%	0.18%
July	-0.09%	0.03%	0.18%
August	-0.12%	0.04%	0.20%
September	-0.03%	0.11%	0.29%
October	-0.10%	0.06%	0.28%
November	-0.06%	0.09%	0.26%
December	0.02%	0.16%	0.31%

*Jan-May 2015-n/a, calculated using silver forward offered rate and LIBOR; forward rates dataset was discontinued with effect from May 2014 and replaced with Silver Forward Lending Rate Composite.

The lease rates shown here are indicative, reflecting the difference between prevailing forward rates in the currency markets and in the silver market itself. They do not take into account the counter-party risk that any lender would apply to a transaction, or any other external influences, and should therefore be seen as a guide to the shape of the forward curve, rather than absolute levels.

Source: Eikon, Thomson Reuters

APPENDIX 5

LEADING PRIMARY SILVER MINES

Rank	Mine Name	Country	Company	2014 Moz	2015 Moz
1	Dukat [1]	Russia	Polymetal International plc.	19.5	22.3
2	Cannington [2]	Australia	South 32 Ltd.	24.7	22.2
3	Saucito	Mexico	Fresnillo plc.	15.4	22.0
4	Escobal	Guatemala	Tahoe Resources Inc.	20.3	20.4
5	Fresnillo Mine	Mexico	Fresnillo plc.	20.1	15.6
6	Uchucchacua	Peru	Compañía de Minas Buenaventura S.A.A.	12.1	13.9
7	Pirquitas	Argentina	Silver Standard Resources	8.7	10.3
8	Greens Creek	United States	Hecla Mining Company	7.8	8.5
9	San José	Argentina	Hochschild Mining plc. / McEwen Mining Inc.	6.5	6.7
10	Imiter	Morocco	Société Métallurgique d´Imiter	6.0	6.7
11	Gümüşköy [3]	Turkey	Eti Gümüş A.Ş.	5.8	5.8
12	Arcata	Peru	Hochschild Mining plc.	5.8	5.6
13	San Bartolomé	Bolivia	Coeur Mining Inc.	5.9	5.4
14	La Colorada	Mexico	Pan American Silver Corp.	5.0	5.3
15	Palmarejo	Mexico	Coeur Mining Inc.	6.6	5.1

[1] including Goltsovoye; [2] reported payable metal in concentrate; [3] estimate

SILVER MINE PRODUCTION BY SOURCE METAL

(million ounces)	2011	2012	2013	2014	2015
Primary					
Mexico	73.0	73.5	78.6	81.6	87.5
Peru	31.0	30.3	32.8	34.1	35.3
Russia	17.3	19.5	22.4	24.3	27.6
Other	97.4	97.4	98.4	113.0	114.3
Total	**218.7**	**220.7**	**232.3**	**253.0**	**264.7**
Gold					
Mexico	24.3	26.5	28.9	29.7	34.5
Argentina	4.8	5.2	6.0	9.4	13.6
Russia	11.8	15.9	13.0	11.6	12.4
Other	56.0	54.2	59.5	62.0	58.4
Total	**96.9**	**101.7**	**107.4**	**112.7**	**118.8**
Copper					
Poland	40.5	41.0	37.3	40.4	41.2
Chile	26.2	23.3	24.0	37.4	37.1
Peru	20.6	21.3	24.9	24.0	35.0
Other	74.0	74.5	83.0	78.2	79.1
Total	**161.3**	**160.0**	**169.3**	**180.0**	**192.5**
Lead/Zinc					
China	73.6	77.0	80.3	77.8	75.6
Mexico	50.7	66.0	63.3	68.4	62.0
Peru	50.6	53.7	54.5	56.4	55.5
Other	99.8	105.4	111.6	115.2	112.7
Total	**274.7**	**302.1**	**309.8**	**317.8**	**305.8**
Other	**6.0**	**6.2**	**4.9**	**4.8**	**4.8**
World Total	**757.6**	**790.8**	**823.7**	**868.3**	**886.7**

Source: GFMS, Thomson Reuters; Company Reports

SILVER MINE PRODUCTION BY MAIN REGION AND SOURCE METAL

(million ounces)	2011	2012	2013	2014	2015
North America					
primary	88.2	87.1	94.9	98.2	105.3
lead/zinc	65.2	82.9	76.0	80.1	70.1
copper	18.9	18.8	18.7	18.7	15.9
gold	34.1	37.7	39.3	40.5	43.0
other	1.9	1.8	2.4	2.5	2.7
Total	**208.3**	**228.4**	**231.3**	**240.1**	**237.1**
Central & South America					
primary	60.3	61.5	65.6	86.4	88.4
lead/zinc	80.4	83.8	86.8	91.4	88.9
copper	48.5	46.6	51.7	63.4	73.8
gold	36.3	32.2	35.1	39.9	44.7
other	2.5	2.8	0.9	0.7	0.5
Total	**228.0**	**226.9**	**240.1**	**281.9**	**296.3**
Asia					
primary	6.1	7.3	7.2	7.2	6.4
lead/zinc	89.9	95.8	103.0	99.6	98.0
copper	41.3	40.9	45.0	42.9	46.4
gold	9.1	10.5	11.7	12.7	12.7
other	1.6	1.6	1.6	1.6	1.6
Total	**147.9**	**156.2**	**168.4**	**164.1**	**165.1**
Rest of the World					
primary	64.2	64.8	64.6	61.1	64.6
lead/zinc	39.2	39.5	44.1	46.6	48.8
copper	52.6	53.7	53.9	55.0	56.4
gold	17.3	21.3	21.3	19.5	18.4
other	0.0	0.0	0.0	0.0	0.0
Total	**173.3**	**179.3**	**183.9**	**182.1**	**188.2**
World Total	**757.6**	**790.8**	**823.7**	**868.3**	**886.7**

APPENDIX 6

COMEX FUTURES AND OPTIONS TURNOVER AND OPEN INTEREST, AND LONDON BULLION MARKET (LBMA) TRANSFERS

		Comex Number of Contracts				LBMA Clearing Turnover [3]		
		Futures		Options		Ounces transferred	Value	Number of
		Turnover [1]	Open Interest [2]	Turnover [1]	Open Interest [2]	(millions)	(US$bn)	transfers
2014	Jan	915,025	147,000	170,972	194,577	144.7	2.9	733
	Feb	1,498,846	135,849	186,896	183,306	185.7	3.9	907
	Mar	973,739	150,831	120,590	193,009	134.0	2.8	779
	Apr	1,388,927	153,088	146,215	197,168	122.1	2.4	732
	May	883,117	160,695	125,040	216,057	136.9	2.7	898
	Jun	1,459,081	156,636	179,043	211,176	163.4	3.2	843
	Jul	957,168	160,918	116,897	222,635	121.7	2.6	719
	Aug	1,216,690	161,839	114,805	210,879	121.0	2.4	709
	Sep	990,802	173,778	188,635	248,189	142.2	2.6	775
	Oct	1,013,749	179,095	180,744	266,262	135.8	2.3	669
	Nov	1,435,078	156,064	199,190	197,929	172.3	2.8	772
	Dec	964,739	151,410	124,625	183,571	152.8	2.5	795
2015	Jan	979,506	163,955	166,782	198,539	145.5	2.5	710.0
	Feb	1,195,969	160,735	96,286	168,559	142.6	2.4	663.0
	Mar	875,819	171,077	95,656	173,472	149.7	2.4	697.0
	Apr	1,431,363	179,953	97,002	166,305	112.9	1.8	620.0
	May	886,343	178,002	103,569	185,094	148.3	2.5	684.0
	Jun	1,499,551	198,023	123,818	149,190	134.3	2.2	623.0
	Jul	988,399	186,246	121,351	164,289	155.2	2.3	644.0
	Aug	1,510,998	157,520	102,749	148,064	142.2	2.1	712.0
	Sep	822,288	158,046	77,955	146,191	163.4	2.4	691.0
	Oct	1,107,547	169,495	90,876	150,301	136.4	2.1	686.0
	Nov	1,291,748	162,326	84,249	94,670	154.6	2.2	714.0
	Dec	864,875	168,442	64,371	94,193	166.1	2.3	732.0

[1] Monthly total; [2] Month-end; [3] Daily average; Source: LBMA, COMEX

SILVER ETP HOLDINGS

(Moz, end-period)		iShares Silver Trust	ETF Securities*	ZKB	Sprott Silver Trust	Other**	Total	Value US$ Bn***
2014	Q1	328.3	66.9	84.0	49.3	121.0	649.6	12.97
	Q2	322.7	67.7	83.0	49.3	118.3	641.0	13.38
	Q3	349.9	63.5	80.9	49.3	117.7	661.3	11.32
	Q4	329.6	62.5	77.1	49.3	117.1	635.5	10.15
2015	Q1	327.3	69.1	75.4	49.3	139.0	637.2	10.58
	Q2	325.2	69.3	74.2	49.1	139.8	635.0	9.97
	Q3	313.5	69.3	71.6	49.0	140.9	626.0	9.17
	Q4	318.9	65.9	69.1	49.0	138.6	617.8	8.54

*Includes ETF Securities LSE, Australia, NYSE, GLTR and WITE

**Other: includes Julius Bär, DB Physical Silver, iShares Silver Bullion ETF, Silver Bullion Trust, Mitsubishi UFJ Tokyo, iShares Physical Silver ETC, Central Fund of Canada, Source Physical Silver, Royal Canadian Mint ETR

***Using the quarter-end London price

Source: Respective issuers; GFMS, Thomson Reuters

Back Cover Image: A handcrafted, sterling silver Billow Square bracelet with 12x12mm turquoise by Ed Levin Jewelry Inc.

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