Launch of World Silver Survey 2024
Philip Newman and Sarah Tomlinson, Metals Focus
April 17th, 2024
World Silver Survey 2024 has been kindly supported by the following companies

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- Coeur Mining, Inc.
- Fresnillo plc
- Pan American Silver Corp.
- Industrias Peñoles S.A.B. de C.V.
- Wheaton Precious Metals
World Silver Survey 2024 has been kindly supported by the following companies

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<td>Asahi Refining</td>
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<tr>
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<td>CIBC Capital Markets</td>
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<td>Gatos Silver Inc.</td>
<td>International Depository Services Group</td>
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<td>Glencore International AG</td>
<td>MAG Silver</td>
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<td>Tanaka Kikinzoku Kogyo K. K.</td>
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<td>Silver Bullion Pte Ltd</td>
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Silver has transitioned from behaving as an industrial metal

- Silver is typically expected to outperform gold to the upside
- However, the crisis in China’s property market...
- And concerns about a stalling economic recovery
- Weighed on industrial metals

New Residential House Sales

Gold:Silver Ratio

Source: Bloomberg
To more as a precious metal

- Net managed money positions their highest since May 2022
- ETP holdings rise to their highest since last July
For the market fundamentals, demand outpacing supply

- Silver supply remains broadly stable
  - 2010-2019: -0.3%
  - 2020-2023: +0.3%

- Break-out for demand from 2021 onwards
  - 2010-2019: +0.5%
  - 2020-2023: +5.2%
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Third, successive, sizeable deficit
Cumulative stock rundown of over 540Moz in just three years.

Source: Metals Focus
Global mined silver production fell by 0.7% y/y in 2023

In 2023 global mined silver supply fell by 6.3Moz to 830.5Moz. Lower production from Mexico, China, Argentina and Australia outweighed increased output in other countries.

Source: Metals Focus
Output fell for the second consecutive year

North America experienced the largest fall in production. Central & South America had the most growth.

Peru remained behind China as the third biggest silver producer, but the gap narrowed.

Source: Metals Focus
Silver production from copper and lead/zinc mines rose

Silver production from copper rose by 3.9% y/y and lead/zinc by 1.0% y/y. Output from gold mines fell by 12.2% y/y while supply from silver mines fell marginally by 0.6% y/y.

Source: Metals Focus
AISC rose to their highest level since 2012

Total cash costs climbed by 61% and AISC increased by 25%.

Silver miners' margins were 30% lower y/y due to cost inflation.

Costs shown on a by-product accounting basis
Source: Metals Focus Silver Mine Cost Service
Costs were affected by falling base metal prices

Oil and gas prices fell but remain relatively high.

In 2023 base metal prices continued their downward trend, but the gold price started climbing toward record levels.
Global silver reserves continue to fall and M&A drops in 2023

Primary silver reserves declined due to mining depletion and modelling changes.

M&A targeting primary silver mines dropped to its lowest level since 2006.

M&A values aggregated in year deals are announced. Source: Metals Focus, Bloomberg.
Hedging and streaming fall

Hedged silver production dropped by 58% y/y to its lowest level for decades.

Silver production covered by streaming and royalty contracts fell by 16% y/y.

Hedge book chart shows delta adjusted position at year-end.
Source: Metals Focus
Mined silver supply forecast to fall again in 2024

Global silver production is expected to marginally decrease by 0.8% y/y to 823.5Moz.

<table>
<thead>
<tr>
<th>Year</th>
<th>Prod. (Moz)</th>
<th>Region</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2023</td>
<td>830.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N America</td>
<td>9.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td>5.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CIS</td>
<td>2.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oceania</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>-1.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asia</td>
<td>-2.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C&amp;S America</td>
<td>-21.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2024</td>
<td>823.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Metals Focus
Key supply/demand changes: 2022 versus 2023

- Most dramatic changes occur for global demand
- A new high for industrial offtake
- Physical investment drops to a 3-year low
- Jewelry & silverware down sharply, but only to 2-year lows

### Global Supply, down 0.5% in 2023

<table>
<thead>
<tr>
<th></th>
<th>2022</th>
<th>Scrap</th>
<th>Official Sector</th>
<th>Mine Production</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moz</td>
<td></td>
<td>1,015</td>
<td>1.7</td>
<td>0.0</td>
<td>1,011</td>
</tr>
</tbody>
</table>

### Global Demand, down 7% in 2023

<table>
<thead>
<tr>
<th></th>
<th>2022</th>
<th>Industrial</th>
<th>Photography</th>
<th>Producer Hedgeing</th>
<th>Physical Investment &amp; Silverware</th>
<th>Jewelry</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moz</td>
<td></td>
<td>1,279</td>
<td>66.1</td>
<td>0.5</td>
<td>5.7</td>
<td>94.0</td>
<td>49.7</td>
</tr>
</tbody>
</table>

Source: Metals Focus
Where are the gains & losses for demand concentrated?

- Chinese demand surges 26% (+79Moz) to a record high
- India weakens by 26% (-75Moz), but only to a 2-year low
- They almost offset each other
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- A comfortable record high for E&E
- Adding almost 100Moz in 2 years
- Underpinned by a surge in PV demand
Photovoltaics: more countries installing PV

2019
115GW
16 GW-scale countries

2010
17GW
2 GW-scale countries

Source: Metals Focus, various
Photovoltaics: but a possible over-reliance on China

Source: Metals Focus
Announcement in 2016 of 1st sizeable subsidy cut in July 2017 for utilities triggers installation rush

Utility subsidies introduced for high insolation regions

Distributed subsidies introduced

Utility subsidies introduced for other regions

Distributed subsidies cut by 44%

The 14th Five-Year Plan sets carbon neutrality goals to drive demand

Global PV installations – N-type cells dominate from 2024

At current prices, silver accounts for 10-12% of the total panel cost

Source: Metals Focus; *PERC Passivated Emitter and Rear Cell; TOPCon Tunnel Oxide Passivated Contact; HIT Heterojunction
Jewelry & silverware demand return to more “normal” levels

Jewelry: 2023 total -13%; excluding India, -3%

Silverware: 2023 total -25%; excluding India, -11%
Physical investment decline last year led by Germany

Source: Metals Focus
Physical investment decline last year led by Germany

Source: Metals Focus
2024 Supply/Demand Outlook

Global Supply: 2024 edges lower by just 1%

Global Demand: 2024 partially recovers by 2%, approaching 2022’s record high

Source: Metals Focus
2024 Outlook, supply/demand gap widens

Another material surplus this year

Stock drawdown continues, 758Moz over 2021-2024F

Source: Metals Focus