Heraeus

PRECIOUS APPRAISAL



Precious Metals





9th October 2023

GOLD 01

- SILVER 02
- PLATINUM 03
- PALLADIUM 04
- RHODIUM, RUTHENIUM, IRIDIUM 05
- **TRENDS AND INVESTMENTS** 06
- **ABOUT HERAEUS** 07

PRECIOUS METALS REVIEW Gold

| 79 A | u | | | | | | | |
|----------------|---|-------|-------|---------------|-------|------------|-------|------------|
| | | | CLOSE | WEEKLY CHANGE | HIGH | DATE | LOW | DATE |
| | | \$/oz | 1,833 | -1.20% | 1,846 | 02/10/2023 | 1,811 | 06/10/2023 |
| | | €/oz | 1,730 | -1.29% | 1,766 | 03/10/2023 | 1,721 | 06/10/2023 |

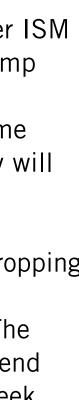
Central bank gold demand on track for a strong year. Despite net negative demand in April and May this year, strong buying activity by central banking institutions has returned. There were no notable sales in August, while purchases totalled 77 t. The Chinese central bank added 29 t to its gold reserves in August, continuing a streak of buying that began in November last year. China's gold reserves have increased by 155 t (4.98 moz) year-to-date, valued at ~\$9.1 billion as of Friday's close. Year-to-date central bank demand has totalled 227 t (source: World Gold Council), in line with the same time last year, excluding the large 'unreported' buying seen in Q3'22. It appears likely that central banks will continue buying into the fourth quarter. At the same pace, net annual demand could top 350 t.

The sell-off in bullion continued last week, the primary driver of this being the relentless rise of government bond yields across the world and their resultant support of US dollar strength. Global bond markets' slide persisted into last week, pushing US Treasury bonds above 16-year highs, and the yield on German 10-year Bunds to the highest level in 12 years.

A tranche of stronger than expected economic data from the US strengthened the dollar index to an 11-month high. The September ISM manufacturing PMI exceeded expectations, indicating that the slump in US industry is easing, though still in contraction. Stronger than expected jobs data spooked traders late on Friday which led to some safe haven buying and a weaker dollar over fears that the economy will be unable to bear bond yields this high for too much longer.

Gold saw the second straight weekly loss to begin the 4th quarter, dropping as low as \$1,811/oz mid-week. By the end of last Friday's trading, gold had risen slightly, closing the week 1.2% lower at \$1,833/oz. The conflict between Israel and the Palestinians escalated over the weekend and resulted in a further increase in gold prices at the start of the week following Hamas' attack on Israel.





9th October 2023

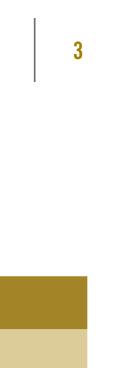
- GOLD 01
- SILVER 02
- PLATINUM 03
- PALLADIUM 04
- RHODIUM, RUTHENIUM, IRIDIUM 05
- **TRENDS AND INVESTMENTS** 06
- **ABOUT HERAEUS** 07

PRECIOUS METALS REVIEW Silver

| 47 | Ag | | | | | | | |
|-----|----|-------|-------|---------------|-------|------------|-------|------------|
| - 1 | | | CLOSE | WEEKLY CHANGE | HIGH | DATE | LOW | DATE |
| | | \$/oz | 21.56 | -3.47% | 21.89 | 02/10/2023 | 20.69 | 03/10/2023 |
| | | €/oz | 20.35 | -3.58% | 20.74 | 02/10/2023 | 19.68 | 05/10/2023 |

Institutional investor selling undermining the silver price. The silver price fell by nearly 3.5% last week, briefly dipping into the \$20/oz range and pushing the gold:silver ratio to 86.6 – the highest level since March. Global holdings of bullion in silver-backed funds have fallen by more than 9 moz in the last two weeks and are now 17.2 moz lower than at the start of August. Negative sentiment from institutional investors is likely adding to silver's recent price decline, though the trend of investment outflows has been underway since the last all-time high in the silver price in early 2021. Silver is now oversold, so a bounce in the price is possible in the near future, and a return of bargain-hunting investors is also a probability as silver hovers around \$20/oz.

Support held for the silver price at just about \$20.70/oz last week, and silver finished the week 3.47% down at \$21.56/oz.





9th October 2023

- GOLD 01
- SILVER 02
- PLATINUM 03
- PALLADIUM 04
- **RHODIUM, RUTHENIUM, IRIDIUM** 05
- **TRENDS AND INVESTMENTS** 06
- **ABOUT HERAEUS** 07

PRECIOUS METALS REVIEW Platinum

| 78 Pt | | | | | | | |
|----------|-------|-------|---------------|------|------------|-----|------------|
| - | | CLOSE | WEEKLY CHANGE | HIGH | DATE | LOW | DATE |
| | \$/oz | 884 | -3.11% | 912 | 02/10/2023 | 854 | 06/10/2023 |
| | €/oz | 835 | -3.11% | 862 | 02/10/2023 | 813 | 06/10/2023 |

Fuel cell trucks prove their practicality. Daimler Trucks' hydrogen fuel cell-powered heavy truck completed a 1,046 km journey on one tank of fuel and fully loaded – in line with diesel counterparts. The company believes that fuel cell-powered trucks have a place alongside battery electric vehicles for long-distance haulage. Fuel cell-powered trucks beat most electric trucks in driving range as battery-powered trucks experience diminishing returns with larger batteries owing to their weight. Heavy-duty vehicles are expected to be some of the earliest adopters of hydrogen fuel cell powertrains. Platinum demand from fuel cell vehicles is expected to offset a portion of the demand lost as autocatalyst demand falls owing to BEV mandates. Hydrogen-related demand for platinum has more than doubled from pre-Covid levels and is expected to reach just under 100 koz this year, with rapid growth expected over the next five years.

The rand weakened past 19.5 to the dollar last week, before recovering to 19.3 per dollar, which put pressure on the platinum price. The platinum price fell significantly below \$900/oz for the first time in 2023, reaching the lowest level in a year and by the close of markets in Europe, stood at \$884/oz.





9th October 2023

- GOLD 01
- SILVER 02
- PLATINUM 03
- PALLADIUM 04
- **RHODIUM, RUTHENIUM, IRIDIUM** 05
- **TRENDS AND INVESTMENTS** 06
- **ABOUT HERAEUS** 07

PRECIOUS METALS REVIEW Palladium

| 46 Pd | | | | | | | |
|----------|-------|-------|---------------|-------|------------|-------|------------|
| | | CLOSE | WEEKLY CHANGE | HIGH | DATE | LOW | DATE |
| | \$/oz | 1,170 | -6.98% | 1,250 | 02/10/2023 | 1,138 | 06/10/2023 |
| | €/oz | 1,104 | -7.08% | 1,181 | 02/10/2023 | 1,080 | 06/10/2023 |

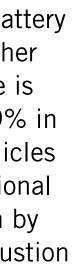
This year has been a recovery year for the US autos market, as supplyside constraints have eased and improved vehicle inventory and model availability has boosted sales. Consumers are seemingly yet to yield to higher interest rates. August sales of all light vehicles grew by 13.3% year-on-year to 1.34 million units. By year-end, total sales are forecast to reach 15.3-15.4 million units (source: Cox Automotive). Despite the jump in BEV sales, North American palladium autocatalyst demand is forecast to rise 10% this year to 1.7 moz, as the rebound in production and sales offsets growth in all-electric vehicles, and a definitive slowdown in economic growth is yet to take effect. The risk to US palladium autocatalyst demand is that the United Auto Workers' (UAW) strike at the major automotive OEMs stretches out longer than expected, which could negatively impact production.

US BEV vehicle sales on course to crack 1 million units this year. Battery electric vehicle penetration lags in the US when compared to the other large light-vehicle markets. In September, the US BEV market share is expected to be ~8%, against 23% in China (January-July) and 13.9% in the EU (January-August). In the US, 732,000 battery-only light vehicles were sold in the first eight months of the year (source: Argonne National Laboratory). At the current sales rate, BEVs should exceed 1 million by year-end. The upside for palladium demand is that electrified combustion engine sales are also growing. Year-to-date, sales of all hybrids are 911,000 units, which supports autocatalyst demand.

The palladium price succumbed to bearish sentiment across the precious metals last week and was the worst performer. After a substantial sell-off on Monday and Tuesday last week, the price stabilised at around \$1,170/oz -6.98% lower week-on-week.







9th October 2023

- GOLD 01
- SILVER 02
- PLATINUM 03
- PALLADIUM 04
- RHODIUM, RUTHENIUM, IRIDIUM 05
- **TRENDS AND INVESTMENTS** 06
- **ABOUT HERAEUS** 07

PRECIOUS METALS REVIEW Rhodium, Ruthenium, Iridium



Delayed recovery in smartphone sales weakens iridium crucible demand.

Global smartphone shipments are forecast to total 1.17 billion in 2023, more than 3% lower than in 2022. Initial forecasts predicted the decline would be as little as 1.1% (source: IDC). Along with slower global growth suppressing the appetite for expensive goods, smartphone replacement cycles are extending. This contributes to the expectation that demand growth for lithium tantalate (used in SAW wave filters) will be minimal, though remaining relatively robust. Lithium tantalate production utilises iridium crucibles to forge components. Global iridium demand is expected to remain stable this year before returning to growth in 2024, in part due to strong growth in the hydrogen economy.

The prices of all three of the small PGMs remained stable week-on-week.

| HODIUM | RUTHENIUM | IRIDIUM |
|----------|-----------|------------|
| 4,650/oz | \$475/oz | \$5,250/oz |
| 4,650/oz | \$475/oz | \$5,250/oz |

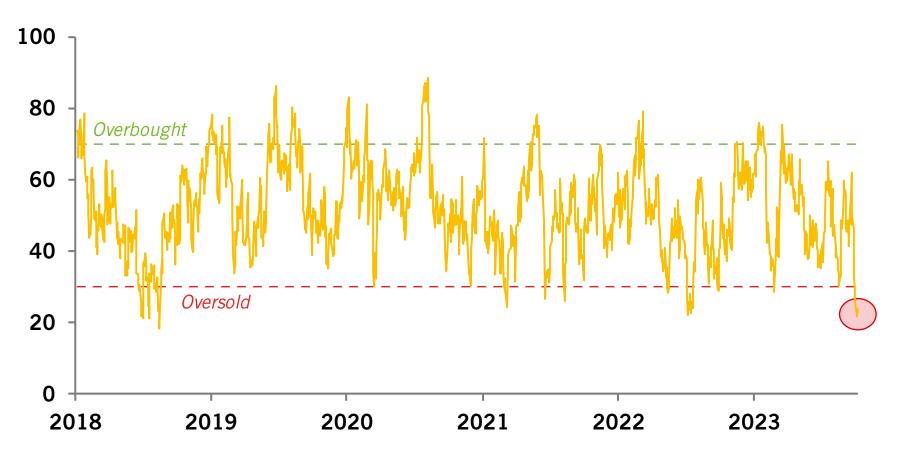


9th October 2023

- GOLD 01
- SILVER 02
- PLATINUM 03
- PALLADIUM 04
- RHODIUM, RUTHENIUM, IRIDIUM 05
- **TRENDS AND INVESTMENTS** 06
- **ABOUT HERAEUS** 07

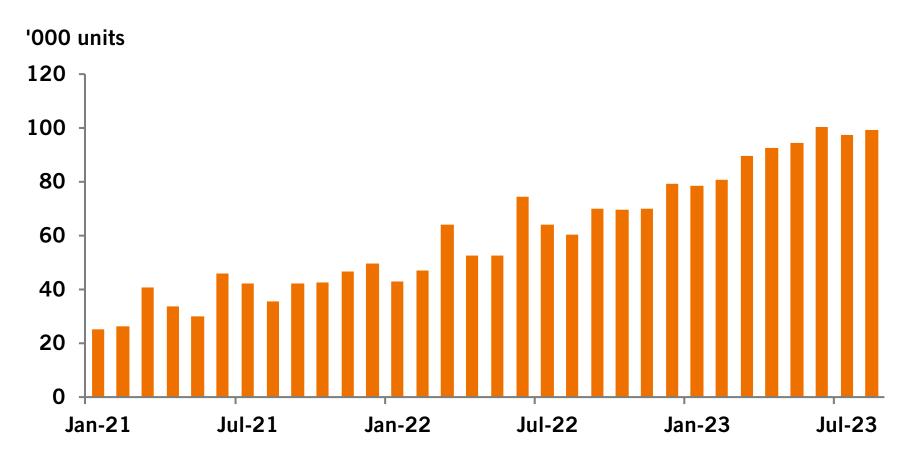
TRENDS AND INVESTMENTS

Gold 14-day relative strength index

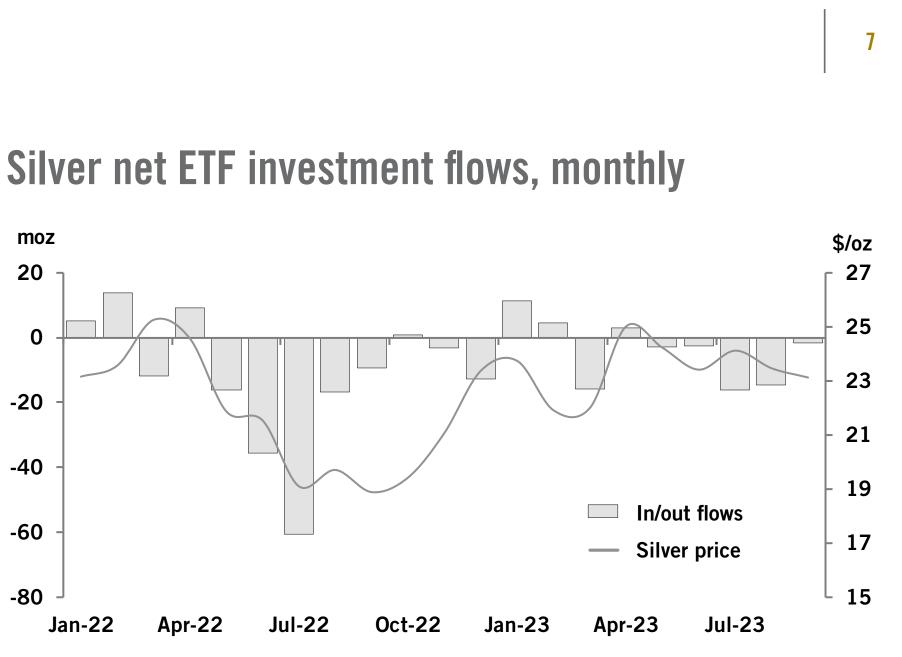


Source: SFA (Oxford), Bloomberg

US BEV sales, monthly

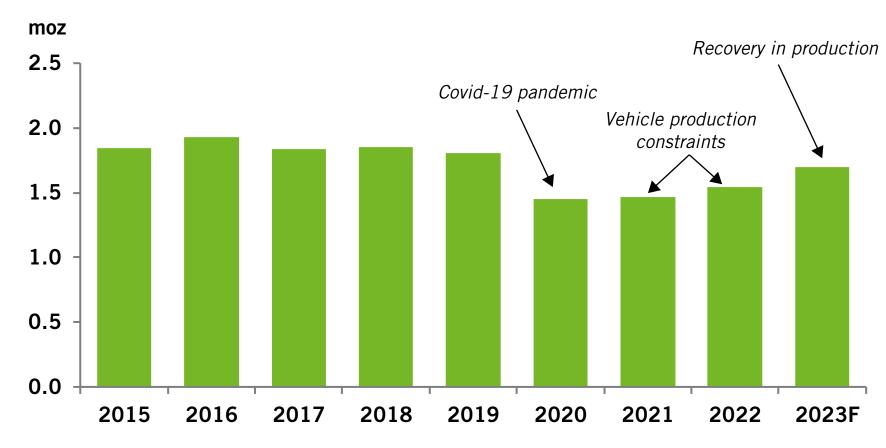


Source: SFA (Oxford), Argonne National Labratory



Source: SFA (Oxford), Bloomberg

North America palladium autocatalyst demand



Source: SFA (Oxford)

9th October 2023

- 01 GOLD
- 02 SILVER
- 03 PLATINUM
- 04 PALLADIUM
- 05 RHODIUM, RUTHENIUM, IRIDIUM
- 06 TRENDS AND INVESTMENTS
- 07 ABOUT HERAEUS

ABOUT HERAEUS

Learn more about important trends in the precious metals markets on a weekly basis with our Heraeus Precious Appraisal. **Please subscribe:** <u>www.herae.us/trading-market-report</u>.

Heraeus Precious Metals

Europe, Middle East, Africa & other regions Phone: +49 6181 35 2750 edelmetallhandel@heraeus.com

South East Asia Phone: +852 2773 1733 tradinghk@heraeus.com

USA Phone: +1 212 752 2180 tradingny@heraeus.com

China Phone: +86 21 3357 5658 <u>tradingsh@heraeus.com</u>

The Heraeus Group is a broadly diversified and globally leading family-owned technology company, headquartered in Hanau, Germany. The company's roots go back to a family pharmacy started in 1660. Today, Heraeus bundles diverse activities in the Business Platforms Metals and Recycling, Health, Semiconductor and Electronics as well as Industrials. Customers benefit from innovative technologies and solutions based on broad materials expertise and technological leadership.

Heraeus Precious Metals is globally leading in the precious metals industry. The company is part of the Heraeus Group and covers the value chain from trading to precious metals products to recycling. In addition to gold and silver, it also has extensive expertise in all platinum group metals.



The Heraeus Precious Appraisal is produced in collaboration with:

SFA (Oxford) Ltd

United Kingdom Phone: +44 1865 784366 www.sfa-oxford.com The Oxford Science Park, Oxford, United Kingdom, OX4 4GA



consulting analysts in tomorrow's commodities and technologies

Disclaimer

This document is being supplied to the recipient only, on the basis that the recipient is reasonably believed to be a professional market participant in the precious metals market. It is directed exclusively at entrepreneurs and especially not intended for the use of consumers.

The material contained in this document has no regard to the specific investment objectives, financial situation or particular need of any specific recipient or organisation. It is not provided as part of a contractual relationship. It is not and should not be construed as an offer to sell or the solicitation of an offer to purchase or subscribe for any investment or as advice on the merits of making any investment.

This report has been compiled using information obtained from sources that Heraeus and SFA (Oxford) Ltd ("SFA") believe to be reliable but which they have not independently verified. Further, the analysis and opinions set out in this document, including any forward-looking statements, constitute a judgment as of the date of the document and are subject to change without notice.

There is no assurance that any forward-looking statements will materialize. Therefore, neither SFA nor Heraeus warrants the accuracy and completeness of the data and analysis contained in this document.

Heraeus and SFA assume no liability for any losses or damages of whatsoever kind, resulting from whatever cause, through the use of or reliance on any information contained in this document. However, in so far as a liability claim exists under German law, Heraeus and SFA shall have unlimited liability for willful or grossly negligent breach of duty.

Unless expressly permitted by law, no part of this document may be reproduced or distributed in any manner without written permission of Heraeus. Heraeus specifically prohibits the redistribution of this document, via the internet or otherwise, to non-professional or private investors and neither Heraeus nor SFA accepts any liability whatsoever for the actions of third parties in reliance on this document.

8