

# PRECIOUS APPRAISAL

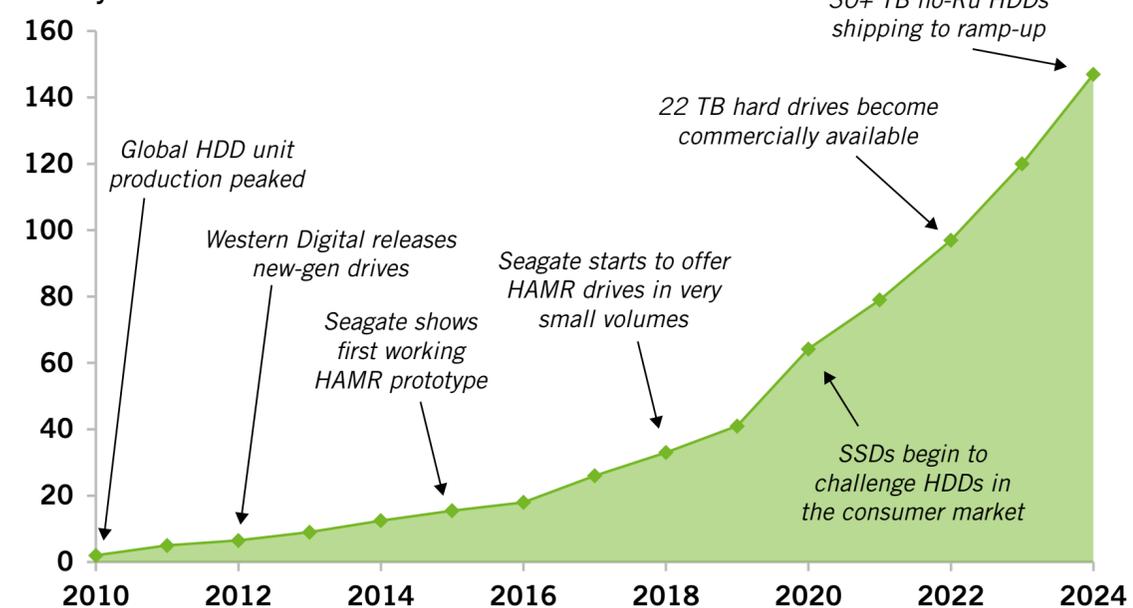


## MARKET SPOTLIGHT

### HAMR starting to fall on ruthenium hard drive demand

**Data storage technology is beginning to shift away from hard drives that use ruthenium.** Seagate has begun shipping the first units of its next-generation, heat-assisted magnetic recording (HAMR) hard drives that do not use ruthenium in the hard disks to specific clients. The benefit of this technology is a greater density of data storage. It improves on the 22 TB max storage size of current generation drives by more than a third. The company plans to ramp up the production of the HAMR drives early next year. It has taken many years of development to reach this stage and for now the erosion of ruthenium demand looks to be gradual as HAMR slowly gains market share.

**Estimated annual global data creation zettabytes**



Source: SFA (Oxford), Statista, IDC

**Weak economies are curbing consumer electronic device buying.** Personal computer shipments have been weak for several quarters. This encourages manufacturers to work down stocks and reduce new orders for hard drives and other components. A relatively new installed base of PCs added during the ‘work-from-home’ era is not yet ready for replacement.

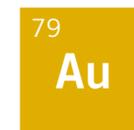
The possibility of a recession in the Eurozone and the US is also a downside risk for ruthenium demand. In a worsening economic slowdown, consumers are more likely to defer new purchases if not absolutely necessary, and high inflation has put a strain on disposable income. Seagate (~40% of HDD market) predicts sluggish shipments over the next two quarters, and results for Q1 confirm weak sales thus far in 2023 from both Seagate and Western Digital.

**Macroeconomic headwinds are also affecting expansion of the large-scale datacentre market.** A slowdown in expansion of new datacentre demand is also likely as hard disk manufacturers work down inventory and investment in new centres is cramped. Western Digital’s revenue from the cloud storage sector declined by 32% year-on-year in Q1’23, greater than the fall in the consumer segment. On the upside, forecasts for global data creation (and therefore required storage) see a large ramp-up in the next 12-24 months, particularly as big data and artificial intelligence become more important in everyday life. This trend should underpin data storage demand in the medium term.

**Hard disk demand for ruthenium accounts for ~5% of total demand.** Although there is a risk to ruthenium demand in data storage in the medium term thanks to the anticipated ramp-up of HAMR, other areas, particularly the hydrogen economy, could provide new demand to offset this. Ruthenium demand in hydrogen fuel cells is forecast to more than double in the next few years. In the next 12 months, macroeconomic weakness and lower demand could depress the ruthenium price.

# PRECIOUS METALS REVIEW

## Gold



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	1,960	0.11%	1,988	20/07/2023	1,946	17/07/2023
€/oz	1,763	1.16%	1,776	20/07/2023	1,734	17/07/2023

**Inflation data suggests further interest rate hikes are coming.** The next Fed meeting is later this week and a 25 bp rate hike is expected after a pause at the last meeting. Headline US inflation for June came in at 3.0% year-on-year but core inflation (excluding food and energy) was still 4.8%. In the Eurozone, headline inflation fell to 5.5% in June but core CPI went up to 5.5% year-on-year, suggesting the ECB will need to impose more rate hikes. The ECB meeting follows the Fed's on 27 July. Higher interest rates are not necessarily good for gold, although the price has held up well considering how much interest rates have climbed over the last year. However, if the dollar continues to weaken that could support the gold price, although in euro terms the gains would be reduced by the currency movement.

After hitting a record high in August 2020, two subsequent attempts to rally only made marginal new highs. Gold has made steady progress higher in July but the price needs to clearly break above \$2,090/oz to indicate the bull market is continuing.

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## Silver

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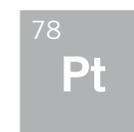
	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	24.64	-1.09%	25.27	20/07/2023	24.59	21/07/2023
€/oz	22.16	-0.05%	22.55	20/07/2023	21.95	17/07/2023

**Economic headwinds continue to impact electronics sales.** Smartphone sales declined by 11% year-on-year and PC shipments fell 12% year-on-year in Q2'23 (Source: Canalys), although PC sales did at least go up quarter-on-quarter whereas smartphone sales did not. Silver electrical and electronics demand was 231.2 moz (ex. photovoltaics) last year or ~19% of total demand (source: The Silver Institute) but is expected to shrink this year. However, silver use in photovoltaics is predicted to expand, more than offsetting that loss.

Silver is close to being overbought so may struggle to make much more headway near term. \$26/oz is the overhead resistance level which could cap gains. The recent rally has pushed down the gold:silver ratio to around 79 from over 84.

# PRECIOUS METALS REVIEW

## Platinum



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	964	-1.17%	996	18/07/2023	956	21/07/2023
€/oz	868	-0.03%	886	18/07/2023	858	20/07/2023

**South African platinum output is forecast to increase slightly this year** to 4.1 moz. However, that is contingent on work-in-progress stock, which was built up owing to a combination of processing plant maintenance and power curtailment, being processed. Recently, the state power utility Eskom had kept power cuts to a low level but had to increase load-shedding to Stage 4 last week as eight power plant units were inoperative. How serious the power shortages are for the rest of the year will determine how much of the work-in-progress material will reach a refinery and whether actual production will match the forecast.

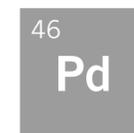
Anglo Platinum reported Q2'23 production of 489 koz, which was down 19% year-on-year. A number of factors contributed to the result, including the impact of Eskom load-shedding. The company attributed a further increase in work-in-progress stock of 38.9 koz (PGM) to power supply shortages.

Northern Platinum reported a 13% increase in PGM production (4E) from its mines to 810 koz in its full-year results (year ending in June). The company also produced 120 koz from material purchased from third parties. Northam has a long-term plan to expand its annual production to 1 moz, which includes growth at Booyssendal and the restarted Eland mines.

The platinum price reversed sharply last week as the rand started to weaken. The price found support around \$900/oz in late June and early July and that will need to hold again or further downside will likely follow.

# PRECIOUS METALS REVIEW

## Palladium



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	1,289	1.69%	1,329	18/07/2023	1,260	17/07/2023
€/oz	1,159	2.74%	1,184	18/07/2023	1,121	17/07/2023

**Despite an apparently sluggish economy, China’s auto sales continue to grow.** Passenger car sales were up 2.1% year-on-year in June and were 9% higher in the first half of the year compared to H1’22. Total palladium automotive demand in China is forecast to hold steady at around 2.6 moz this year as vehicle sales growth is offset by platinum substitution. PHEV cars’ market share has continued to edge up, reaching 10.2% in June, which has helped to maintain the sales of catalysed vehicles even though BEV market share also continues to advance.

Anglo Platinum’s total PGM production fell by 13% year-on-year in H1’23 to 1.7 moz (6E). However, palladium output was least affected, slipping 3% to 583 koz. The company has maintained its refined production guidance of 3.6-4.0 moz (6E) for the year but will need to see improved performance in the second half of the year to achieve that.

The palladium price failed to hold above \$1,300/oz last week. The most recent rebound stalled at a similar level to the upturn in late June and it appears that the rallies are still being sold, implying there could be more downside. Nearby support is around \$1,200/oz.

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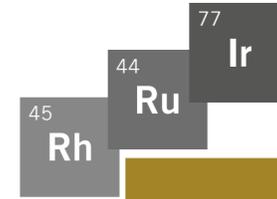
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# PRECIOUS METALS REVIEW

## Rhodium, Ruthenium, Iridium



	RHODIUM	RUTHENIUM	IRIDIUM
Reporting Week	\$4,600/oz	\$475/oz	\$5,050/oz
Previous Week	\$4,850/oz	\$475/oz	\$5,050/oz

**Fuel cell car sales have a long way to go.** China had sales of 300 fuel cell cars in June, after none were recorded in the previous five months (source: China Association of Automobile Manufacturers). Cost and lack of refuelling infrastructure remain impediments to widespread adoption of fuel cell cars. Fuel cells are being used mostly in buses and commercial vehicles but even here sales lag those of EVs, as 3,681 units were sold last year compared to more than 300,000 EVs. Central and local governments are supporting fuel cell vehicles with subsidies and the Chinese government has set a target of 50,000 fuel cell vehicles in the country by 2025. This should add some modest upside to ruthenium demand.

**The rhodium price fell to \$4,600/oz last week** while iridium and ruthenium prices held steady.

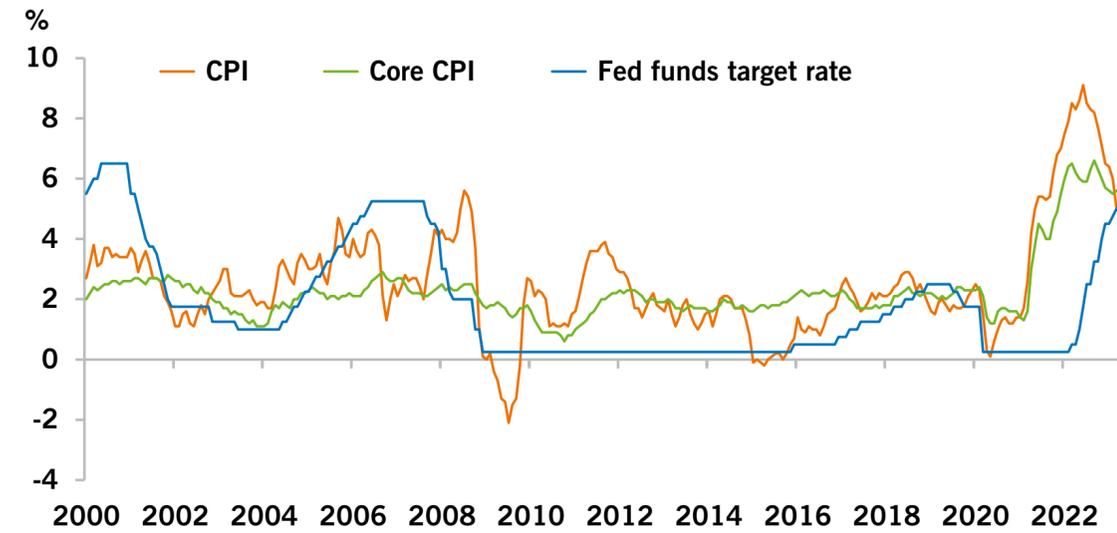
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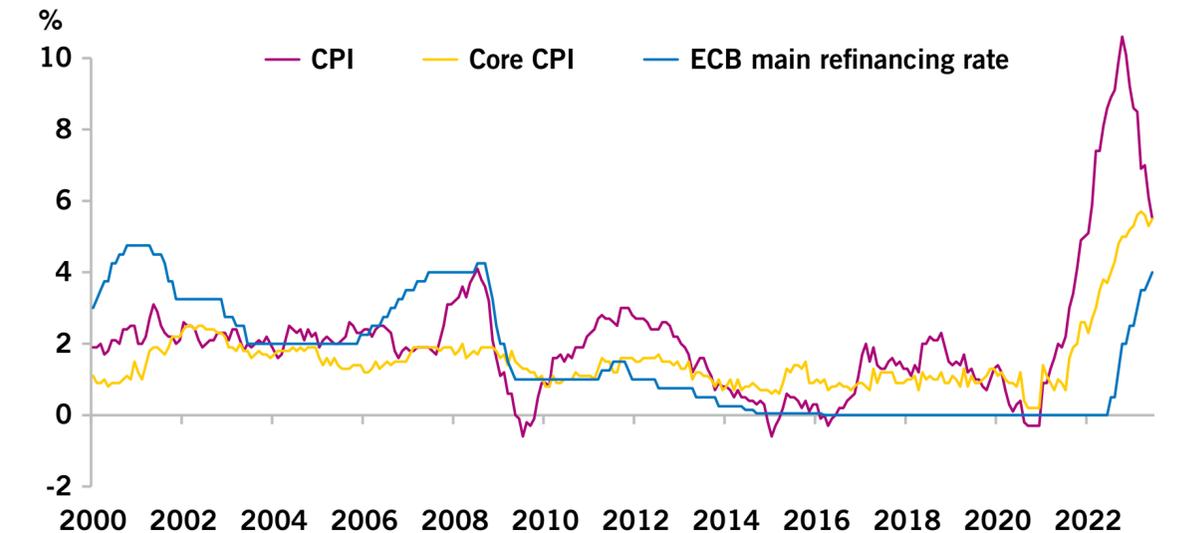
## TRENDS AND INVESTMENTS

### US inflation and interest rates



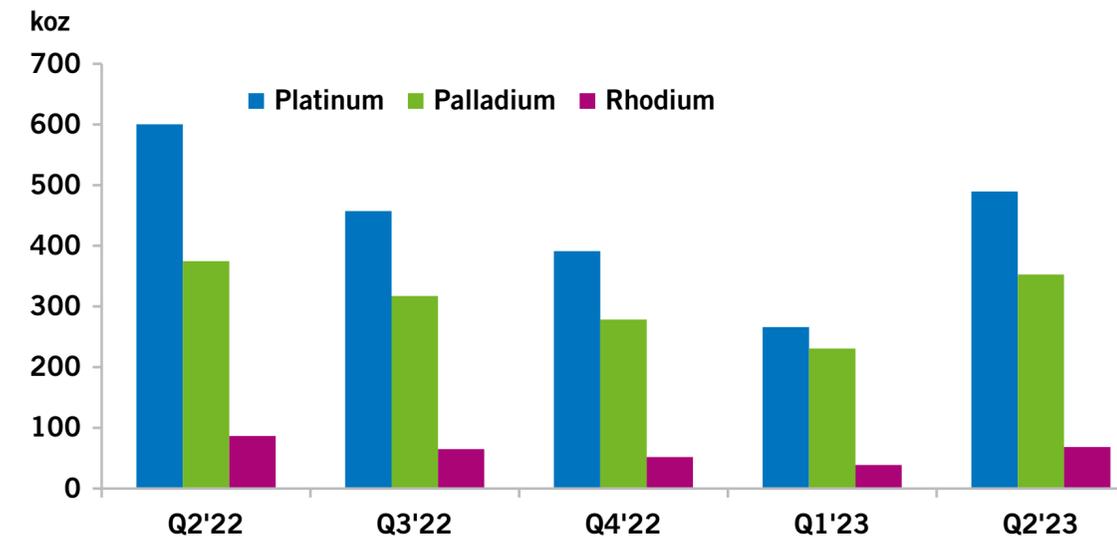
Source: SFA (Oxford), Bloomberg, Fed

### EU inflation and interest rates



Source: SFA (Oxford), Bloomberg, ECB

### Anglo Platinum refined production



Source: SFA (Oxford), Anglo Platinum reports

### Gold:silver ratio



Source: SFA (Oxford), Bloomberg

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