

# PRECIOUS APPRAISAL



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## MARKET SPOTLIGHT

### Rhodium outperformed in H1'24

**PGM prices largely declined moderately over the first half of the year, after experiencing high volatility over the past few years.** Iridium, ruthenium and palladium closed H1'24 down between 5% and 10% from the beginning of 2024. Platinum remained almost flat (0.3% increase) while rhodium became the outperformer, with a 5% increase.

**Rhodium has benefited from a slowdown in substitution and destocking from the glass sector this year.** In 2022 and 2023, Chinese fiber glass manufacturers sold significant amounts of rhodium back into the market (~200 koz) as they had substituted cheaper platinum into bushings. This has slowed this year, helping to reduce downward pressure on the rhodium price. However, there remains a risk of more limited further sales that could cap the rhodium price later in the year.

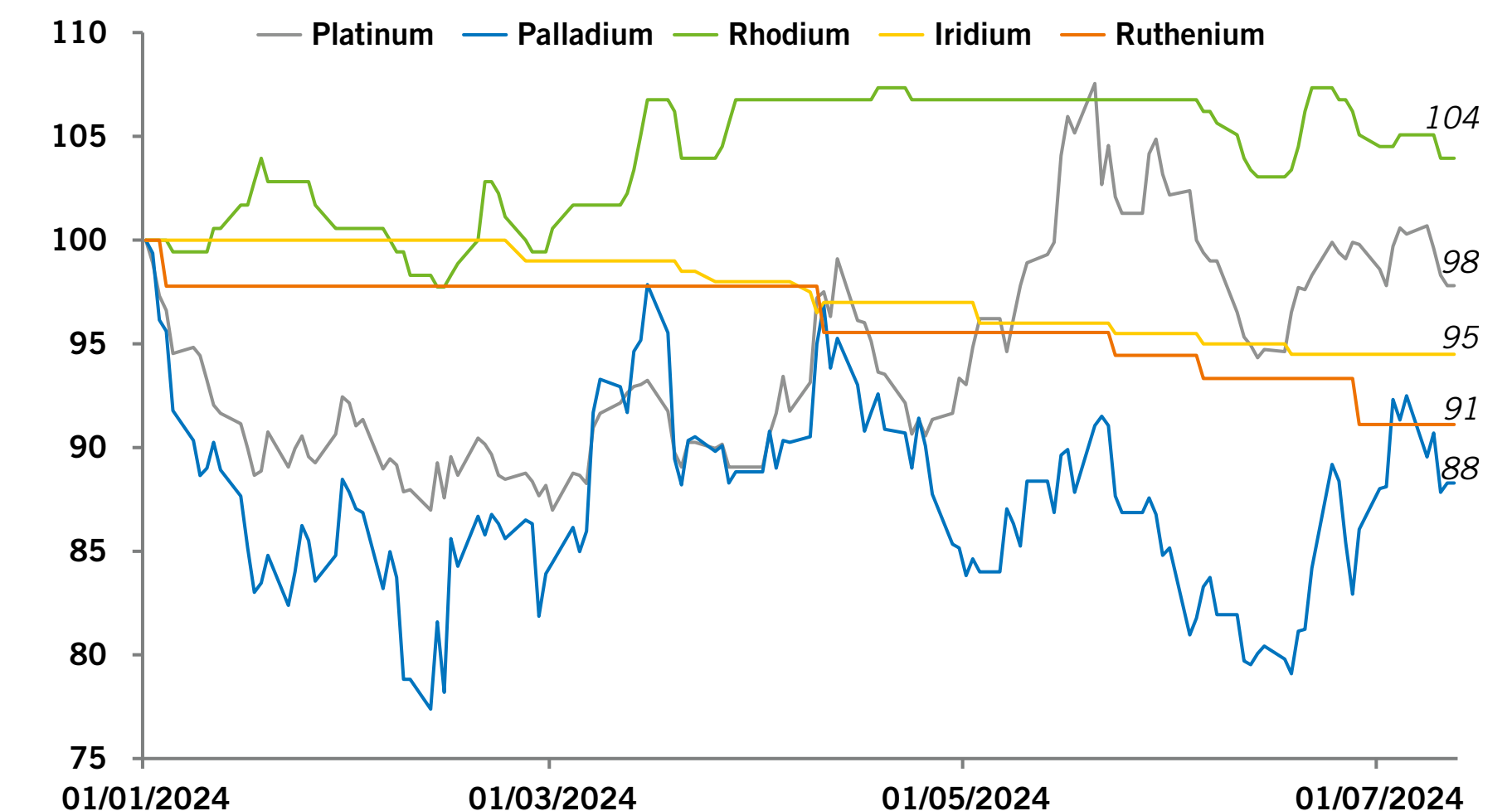
**Slower EV transitions worldwide have turned out to be a positive force sustaining PGM demand,** supported by growth in overall light-vehicle sales. The year-to-date share of battery electric vehicles (BEVs) in total light-duty vehicle sales has stagnated at 6.9% in the US and 12% in the EU (source: Argonne National Laboratory, ACEA). Even though China's NEV sales share continued to make record highs, PHEVs start to displace BEVs at a faster pace. BEVs' share in total NEV sales dropped to 61.8% in the first half of the year, from 72.7% in 2023 (source: CAAM). PHEVs have approximately the same PGM loadings as in ICE vehicles, meaning that they would offset some PGM demand loss from vehicle electrification.

**Palladium prices trended down, with significant volatility despite a fundamental market deficit,** and the price has yet to find a floor. Demand in China was increasingly met by Russian supplies with a discount in a shadow market. In Q1'24, China imported 338 koz of palladium imports from Russia, around 77% of its total imports. Investors' short-covering may have contributed to palladium's volatility, a phenomenon that could recur as the net speculative futures position on NYMEX is still over 1 moz short.

**Macroeconomic risks remain for the second half of the year,** despite ongoing growth in the US and an improvement in the EU economy. Historical seasonality suggests that platinum, ruthenium and iridium prices tend to drop in Q3 before recovering and gaining in Q4, while palladium and rhodium prices tend to consistently rise in H2. This may indicate some upside for PGM prices in H2'24. However, worsening loan delinquency rates in the US and the still-inverted yield curve suggest a recession scenario is still possible. An increasingly likely Trump victory in the upcoming US presidential election could also trigger short-term market volatility. A recession in the US, spreading to other regions, could reduce consumer appetite for new vehicles and dampen PGM demand to a much greater extent which would see PGM prices weaken later in H2'24.

PGM metals price performance in H1'24

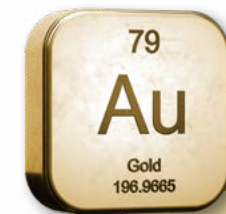
Indexed, 100 = 1 Jan 2024



Source: SFA (Oxford), Bloomberg

# PRECIOUS METALS REVIEW

## Gold



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	2,412	1.13%	2,425	11/07/2024	2,350	09/07/2024
€/oz	2,212	0.45%	2,231	11/07/2024	2,171	08/07/2024

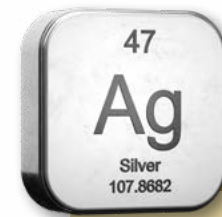
**Gold rose back over \$2,400/oz on softer inflation numbers.** On Thursday, the US reported a 3.0% inflation year-on-year, the lowest since June 2023 and an encouraging sign that inflation is easing. The news also injected more confidence for the market to see a rate cut delivered by the Fed soon. The gold price rose by over \$30/oz from the news on Thursday as the dollar weakened, a sign that rate cuts delivered this year could hit the dollar hard and open up possibilities above \$2,400/oz for gold.

**Gold also recorded strong ETF inflows over the past two weeks** of approximately 1.1 moz, with gains made mostly by funds in the UK and US. Against a backdrop of managed money gold futures long position liquidation, ETF investors are beginning to pick up the pace of investment purchases, which has helped the gold price retain its current level. Managed money long futures positions have been reduced by 9% since the end of May to 19.8 moz, according to the most recent data. Meanwhile, the gold price has risen by more than 3%. The winding down of futures positioning during price appreciation potentially allows for momentum to build again during the next rally, taking gold higher. This could be accentuated if a trend of gold ETF inflows is more firmly established. However, ETF holdings are only a couple of months removed from the post-Covid low of 80.5 moz, and sentiment is yet to turn firmly positive.

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# PRECIOUS METALS REVIEW

## Silver



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	30.91	-1.50%	31.75	11/07/2024	30.39	12/07/2024
€/oz	28.35	-2.16%	29.89	11/07/2024	27.58	09/07/2024

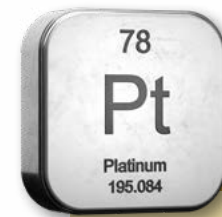
**Innovative technology could effectively reduce silver loadings in solar cells.** The China PV Industry Association (CPIA) has published data showing that in 2023 the solar PV sector consumed 220 moz of silver, or 18% of global total silver demand, with solid growth expected again this year – particularly if China managed to beat its own forecasts (as is typically the case). Advanced solar cells are generally more silver-intensive, especially in the still commercially immature HJT cells that are expected to make up approximately 30% of market share by 2030. However, the CPIA reported that there is growing adoption of new technologies by Chinese solar manufacturers, including Zero Busbar and LECO technologies, that could effectively lower silver paste consumption per cell. These technologies are anticipated to cut silver loadings from the current 109 mg/cell in TOPCon cells to 80 mg/cell and from 200+mg/cell to 70 mg/cell in HJT cells in 2030. As the IEA forecasts that annual solar installations will more than double by 2028 compared to the 2022 level, innovations may offset some high demand projected for the sector dominated by a group of major Chinese manufacturers.

The silver price closed on Friday at \$30.91/oz, trailing its recent high of \$32.01/oz, and the price is likely to face resistance at this level at its third test.



# PRECIOUS METALS REVIEW

## Platinum



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	1,000	-3.34%	1,020	08/07/2024	982	09/07/2024
€/oz	918	-3.91%	942	08/07/2024	908	11/07/2024

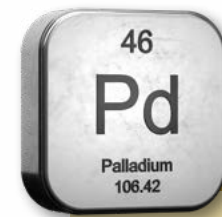
**Platinum demand from the petroleum industry is estimated to fall to 175 koz this year** (-16% year-on-year), after three years of steady growth. Petroleum refinery closures in Japan are the primary cause of the decline in demand, as since Q4'23 the country has closed at least 240,000 barrels-per-day of capacity. Japan's aging and declining population, plus an increasing acceptance of green energy, has crimped fuel demand in the country. The impact of refinery closures on petroleum platinum demand are two-fold. Future demand for catalyst replacement is lowered, and there is the short-term risk that the metal that has been part of the 'closed-loop' system could re-enter the 'open' market. Additional metal entering the market would contribute to an easing of the current platinum market deficit and would not be supportive of the price. As the intensity of petroleum product use falls with rising BEV share, more platinum currently tied up in the petroleum sector could trickle into the market, essentially increasing market liquidity.

The platinum price failed to match the gains of gold last week, and posted a decline back to \$1,000/oz, still somewhat unreflective of the sizeable deficit expected for this year.

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# PRECIOUS METALS REVIEW

## Palladium



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	976	-5.77%	1,026	08/07/2024	964	12/07/2024
€/oz	896	-6.47%	947	08/07/2024	887	12/07/2024

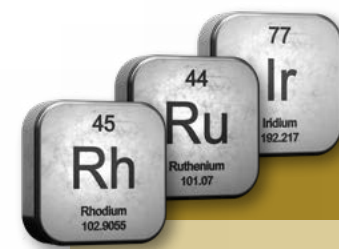
**Intensified automotive market growth by PHEVs in China may offer a boost to palladium demand.** Between January and June 2024, cumulative PHEV sales in China recorded 1.92 million units, an 85.2% increase year-on-year. As a result, PHEVs have boosted their share in total NEV sales from 27.7% a year ago to 38.9% currently. The shift may reflect difficulties for BEVs to dominate market shares due to range anxiety for certain consumers. Chinese OEMs’ targeted efforts to launch new PHEV models with range of 2,000 km are also boosting their popularity. This trend stands in stark contrast to the US where PHEVs are still a transitional product with limited sales and appeal to consumers.

Under current technology adoptions, PHEVs possess comparable PGM loadings to pure ICE vehicles. A bigger PHEV market share relative to BEV could mean palladium demand is sustained despite the rapid vehicle electrification in China. China’s PGM consumption in vehicles reached 2 moz in 2023, accounting for 27% of global share. Currently, China’s PHEVs production is largely for domestic consumption – a pick-up in its PHEV exports could further boost palladium demand.

A rally on Thursday could not prevent palladium seeing an overall decline last week, as price pressure persisted. On Friday the price closed at a slight discount to platinum at \$976/oz.

# PRECIOUS METALS REVIEW

## Rhodium, Ruthenium, Iridium



	RHODIUM	RUTHENIUM	IRIDIUM
Reporting Week	\$5,075/oz	\$420/oz	\$5,175/oz
Previous Edition	\$5,125/oz	\$420/oz	\$5,175/oz

### Hydrogen hopefuls are shifting focus to the US heavy-duty market.

Hyzon, a fuel cell truck developer based in the US, is winding up operations in Europe and Australia to focus on its main market in North America. Challenging market conditions in Europe and Australia are cited as the reason for the exit. In the last year there has been a flurry of activity from fuel cell start-ups in the US. However, sales and market share of FCEVs are yet to reflect this. Total zero-emission heavy-duty sales in the US represent a fraction of total sales, with FCEVs making up a small portion. As a result, ruthenium fuel cell demand on a global scale is forecast to make up <5% of total demand this year. California leads the way in US hydrogen mobility and at present has 54 active fuelling stations, with two additional locations still in construction. Although the growing refuelling infrastructure will help to encourage a larger number of heavy-duty FCEVs on the roads, the price of hydrogen is still too high to make commercial sense when compared to diesel or electricity. Ruthenium used in fuel cell systems is forecast to rise by the end of the decade, though in that time competition from BEV trucks is expected to increase dramatically.

The iridium and ruthenium prices were unchanged last week, having both fallen to new lows at the beginning of the month. Rhodium, on the other hand, followed its peers lower to \$5,075/oz but is still trading in the same range it has done since the beginning of the year.

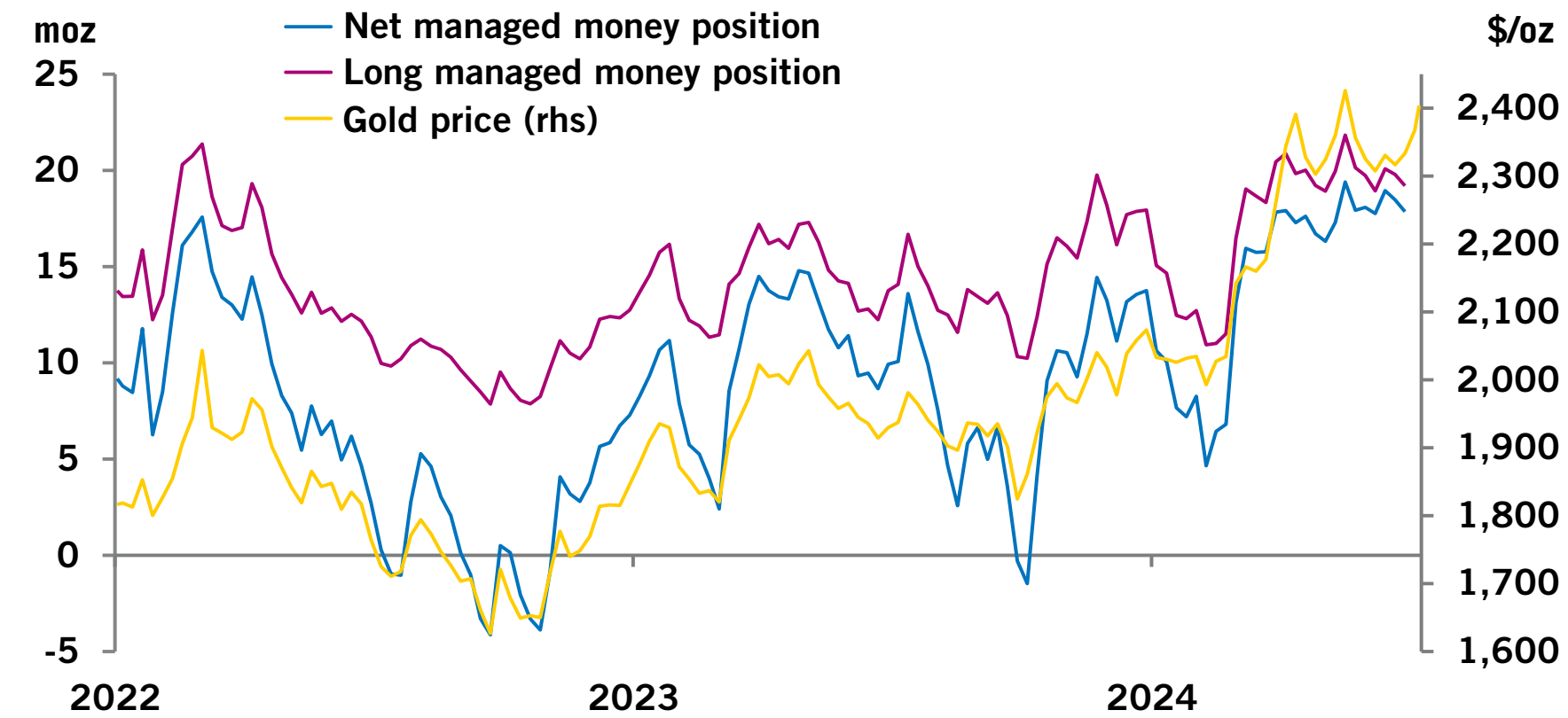
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15<sup>th</sup> July 2024

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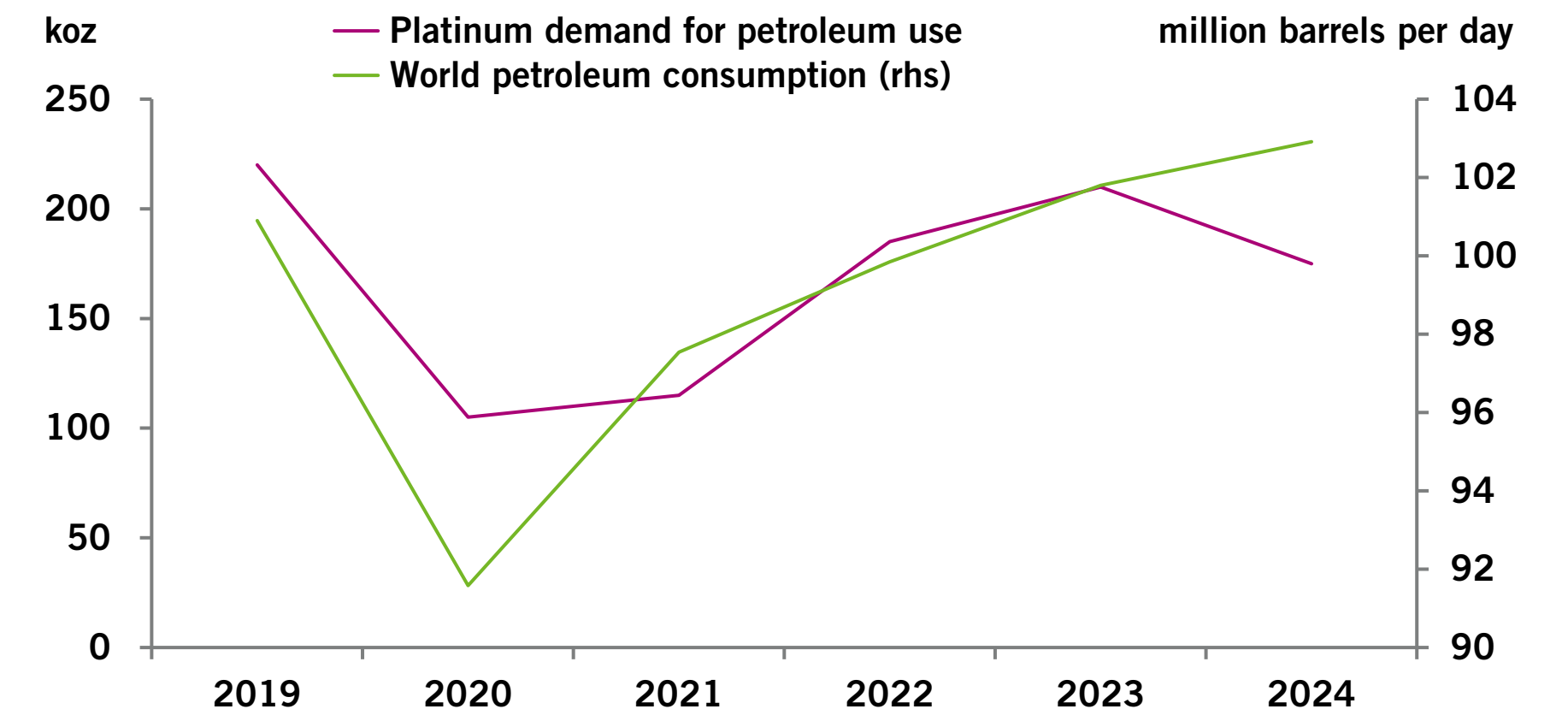
## TRENDS AND INVESTMENTS

### Gold price and managed money position



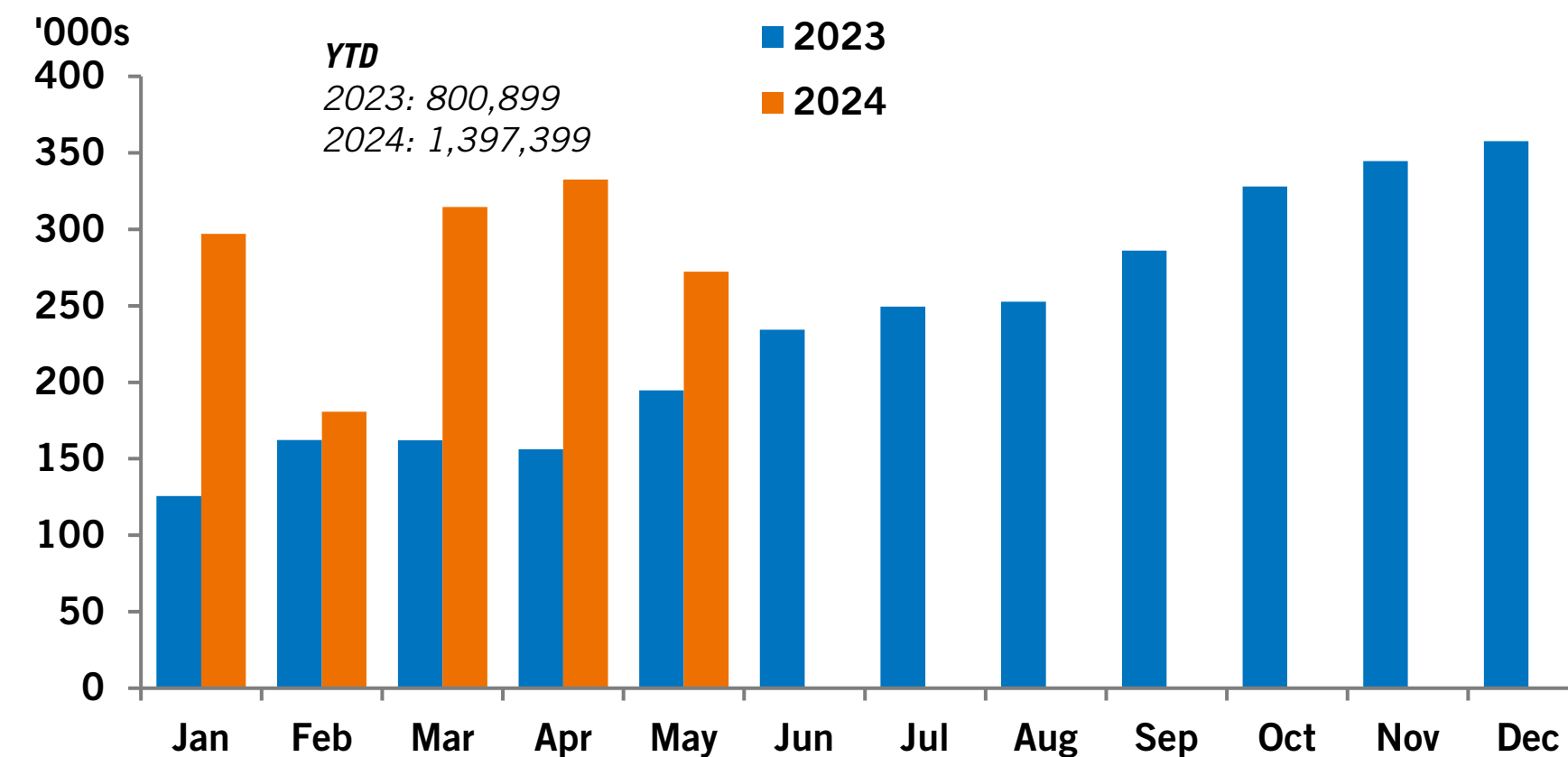
Source: SFA (Oxford), Bloomberg

### Platinum demand and petroleum consumption



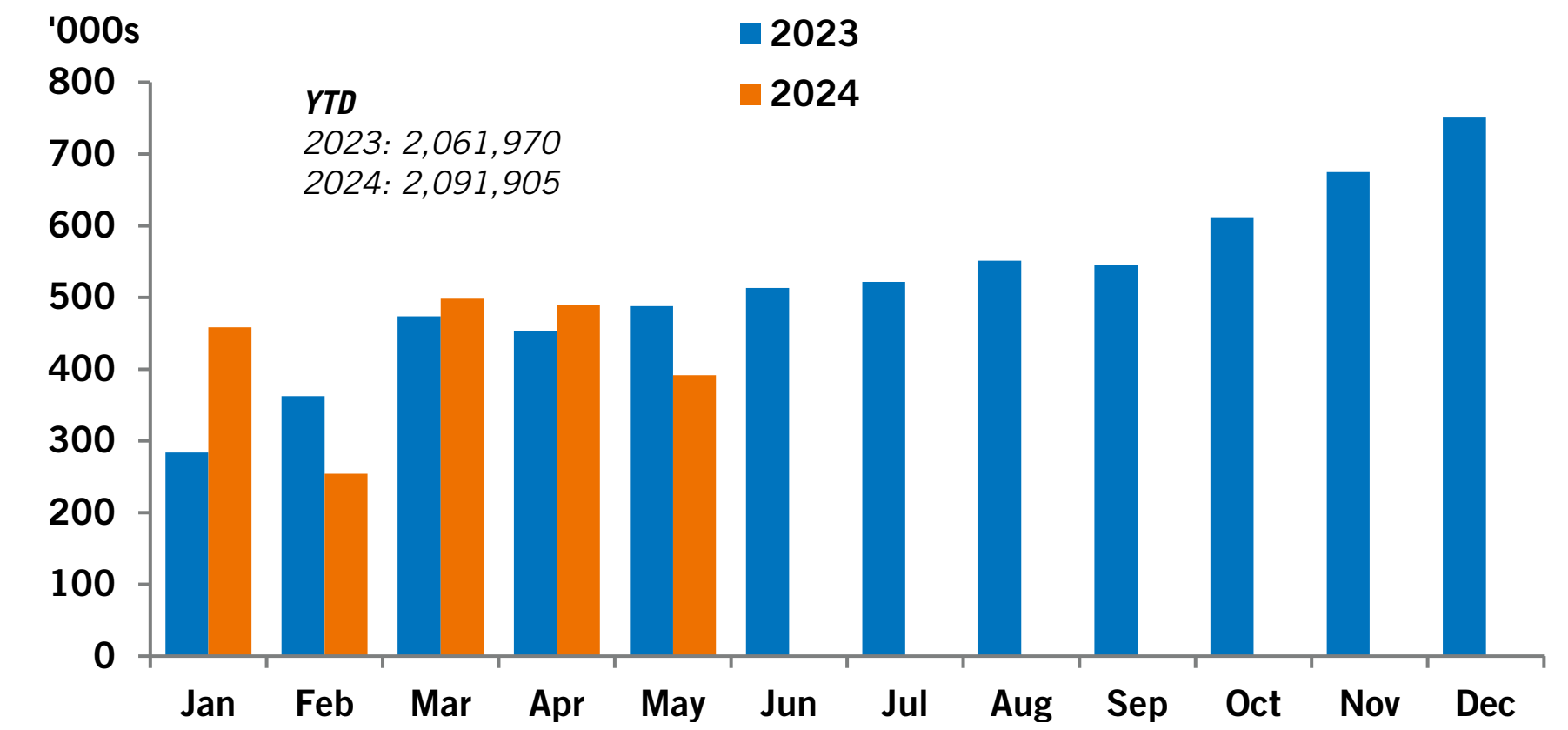
Source: SFA (Oxford), EIA

### China's PHEV production



Source: SFA (Oxford), Bloomberg

### China's BEV production



Source: SFA (Oxford), Bloomberg



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