

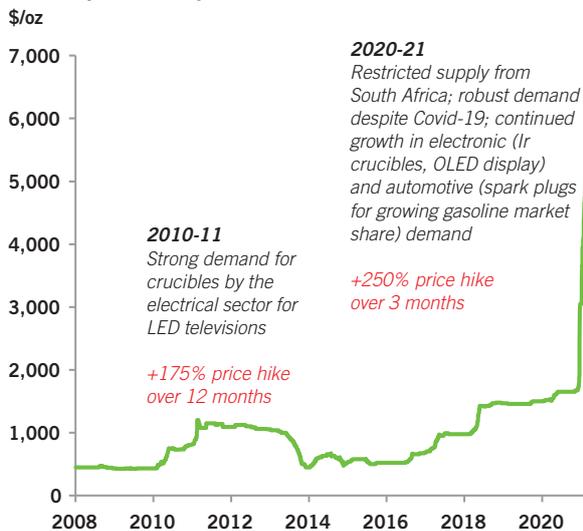


MARKET SPOTLIGHT

The future looks bright for iridium

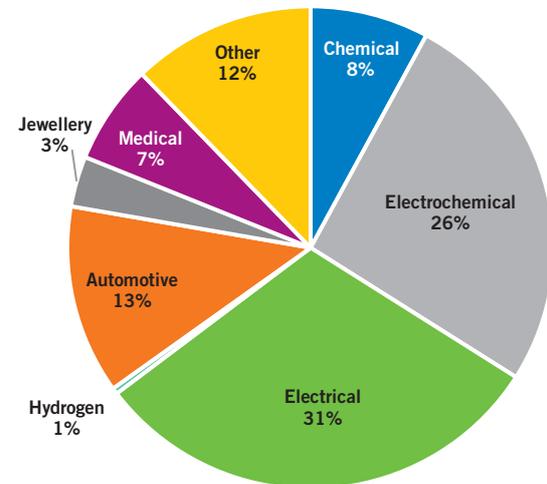
Iridium's unique properties offer bright prospects for efficient display technologies. OLED (organic light-emitting diode) technology is the fastest growing display technology used in consumer electronics and is built on an iridium compound. OLED screens have many advantages over LED and LCD screens in terms of picture quality and efficiency, as well as increasing the screen-to-body ratio of devices, which makes OLED the clear winner for next-generation devices such as 5G-enabled smartphones. Electrical end-uses, including OLED display, accounted for ~70 koz of iridium last year, 31% of total demand.

Iridium price history



Source: SFA (Oxford), Heraeus

Iridium demand 2020



Source: SFA (Oxford). Note: Totals may not sum owing to rounding

Growth of the 5G smartphone market globally is expected to drive iridium consumption, with premium products supporting demand for OLED displays. Costs are declining as more manufacturers release 5G handsets, which will accelerate the rate of adoption. German technology group Merck recently announced a €20 million expansion of its OLED manufacturing capacity at sites in Korea and China to meet growing customer demand in Asia.

Global smartphone shipments are forecast to grow 5.5% year-on-year in 2021, driven by a post-Covid recovery in demand and 5G device uptake (source: International Data Corporation). 5G is anticipated to be a key driver of growth, boosted by the success of Apple's full iPhone 12 line-up and selected Samsung Galaxy handsets. IDC expects 5G smartphone shipments to account for more than 40% of global volume in 2021, growing to 69% in 2025.

The iridium price has escalated more than 250% over the past three months, exceeding \$6,000/oz last week as the market adjusts to the impact of last year's supply disruption in South Africa. On top of this, iridium demand was relatively robust in 2020, so the market is exceptionally tight. High prices are likely to prevail until refined output normalises.



PRECIOUS METALS REVIEW

79 Au Gold

	Close	Weekly change	High	Date	Low	Date
\$/oz	1,718	1.23%	1,740	11/03/2021	1,677	08/03/2021
€/oz	1,438	0.89%	1,456	11/03/2021	1,415	08/03/2021

Gold purchasing by central banks is slowing. Following net purchases in 2020, central banks returned as net sellers in January and global official reserves declined by 9.4 tonnes, led by Turkey (-17.2 tonnes) and Russia (-3.1 tonnes) (source: World Gold Council, International Monetary Fund). There is speculation that Russia's sale is linked to the country's announcement earlier in the year that its central bank will begin minting a new 50-ruble gold coin. While central banks were net buyers last year, the pace of buying slowed and purchases contracted by 59% year-on-year to 272.9 tonnes, driven in part by

Russia's decision to pause buying. Central bank demand for gold is expected to improve slightly this year but remain well below the record levels of buying seen in 2018 and 2019.

Investor interest in gold has waned as the price has declined. Speculative futures positions on NYMEX have dropped and ETF holdings have fallen each day for more than three weeks. Poor sentiment towards gold could signal that the downside is now limited, as the gold price rebounded from a support level last week.

47 Ag Silver

	Close	Weekly change	High	Date	Low	Date
\$/oz	25.75	3.18%	26.46	11/03/2021	24.96	08/03/2021
€/oz	21.53	2.80%	22.14	11/03/2021	21.05	08/03/2021

Fiscal stimulus in the US could benefit silver. The US Congress has passed a \$1.9 billion fiscal stimulus package and President Biden has signed it into law. This includes \$1,400 for lower income earners, so it could well be spent which should ultimately be inflationary. The US CPI has edged up but at 1.7% in February it is still below the Federal Reserve's 2% target. The Fed has

claimed that 2% is now a symmetrical target, implying it would let inflation move higher than that for some time before raising interest rates, particularly as the unemployment rate is still high. If the stimulus does prove inflationary then silver should gain, along with gold, from safe-haven demand.

78 Pt Platinum

	Close	Weekly change	High	Date	Low	Date
\$/oz	1,199	6.55%	1,230	11/03/2021	1,121	08/03/2021
€/oz	1,003	6.30%	1,029	11/03/2021	945	08/03/2021

Tightening emissions legislation for heavy-duty vehicles (HDVs) continues to support platinum demand, as India and China bring their tailpipe standards into line with those of other global markets. BS VI standards have been applied across India since April 2020, while China VI standards have been rolling out and will apply to all HDVs across the country from July 2021. Alternatives to diesel powertrains in HDVs are limited, so there is little risk to this market from technology substitution. Electric powertrains require too many batteries and gasoline engines cannot deliver the torque required. Fuel

cell electric powertrains show great promise in HDVs for the future, but significant investment is needed in the hydrogen economy to facilitate large-scale uptake. Globally, medium- and heavy-duty trucks accounted for 25% of platinum autocatalyst demand last year (550 koz). The platinum price is consolidating after its sharp rally in February. With platinum still at a large discount to gold investors remain interested and the price could remain elevated for the time being despite the industrial surplus.



PRECIOUS METALS REVIEW

⁴⁶ Pd **Palladium**

	Close	Weekly change	High	Date	Low	Date
\$/oz	2,378	1.46%	2,379	12/03/2021	2,280	09/03/2021
€/oz	1,988	1.05%	1,990	12/03/2021	1,921	09/03/2021

China's vehicle sales surged by 365% last month, compared to a year earlier when the country was at the height of the coronavirus pandemic, cities were locked down and car showrooms shut. Sales reached 1.46 million units in February (source: China Association of Automobile Manufacturers). The country's industry body expects car sales to increase 4% this year but has warned that production in Q1 is likely to be negatively affected by the global semiconductor chip shortage. The Q1 production loss is estimated at 500,000-550,000 units (source: LMC Automotive), although leading domestic brands such as Geely are reported to be less affected. Production losses are expected to be recouped by the end

of H2. Total vehicle sales in China fell by just 1.9% last year to 25.3 million units as the market (and economy) staged a strong recovery from Q2 onwards. A robust car market combined with the higher PGM loadings required to meet tightening emissions legislation meant China's autocatalyst palladium demand increased by ~7% last year, to 2.4 moz. Global autocatalyst palladium demand is forecast to remain supported in the near term by consumption from two of the largest car markets: ongoing growth in China and the increase in loadings from US Tier 3 emissions legislation. The palladium price continues to trade in a broad range and remains well supported by solid demand.

⁴⁵ Rh ⁴⁴ Ru ⁷⁷ Ir **Rhodium, Ruthenium, Iridium**

	Rhodium	Ruthenium	Iridium
Reporting week	\$25,050/oz	\$420/oz	\$6,100/oz
Previous week	\$30,150/oz	\$405/oz	\$5,750/oz

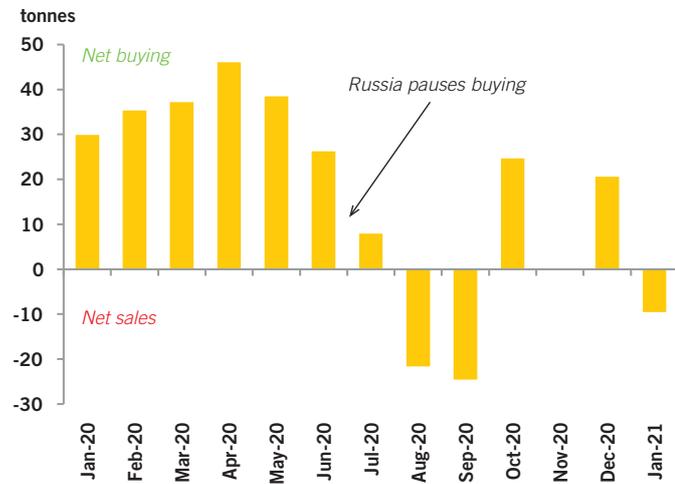
Rhodium fell by 17% last week after reaching a record high of \$30,150/oz in the previous week. Rhodium's price rise has driven industrial costs up over 1,000% from 2018 to 2021, and the cost of global rhodium demand in its end-uses is now higher than platinum and palladium combined (at current prices). While only a small sector of total rhodium demand (13%), industrial use has been under pressure from thrifting for several years owing to sustained high pricing. Rhodium's main industrial applications are in the glass fabrication industry

and chemical catalysis. There is a risk that price-induced substitution (towards higher platinum content or other alloys) will reduce rhodium requirements in the glass sector again this year, which could also affect long-term demand if future price trends do not stimulate reverse substitution. Conversely, expanding acetic acid capacity in China is likely to lift chemical requirements this year. Industrial demand accounted for ~140 koz of rhodium in 2020. Iridium and ruthenium gained 6% and 3.7% respectively last week.



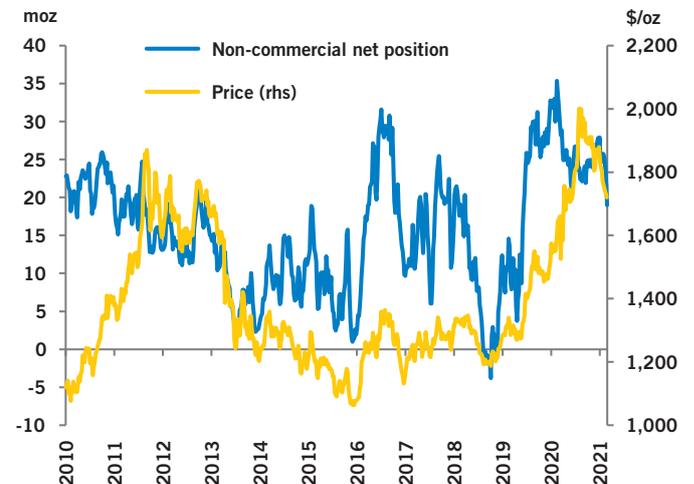
TRENDS AND INVESTMENTS

Central bank gold demand



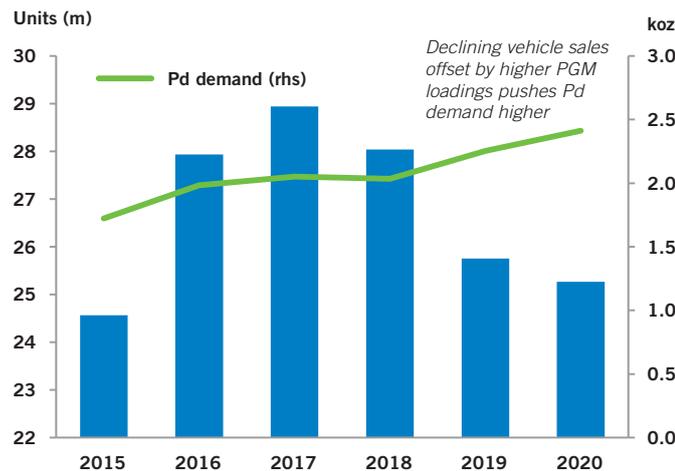
Source: World Gold Council, International Monetary Fund

Speculative gold futures positions



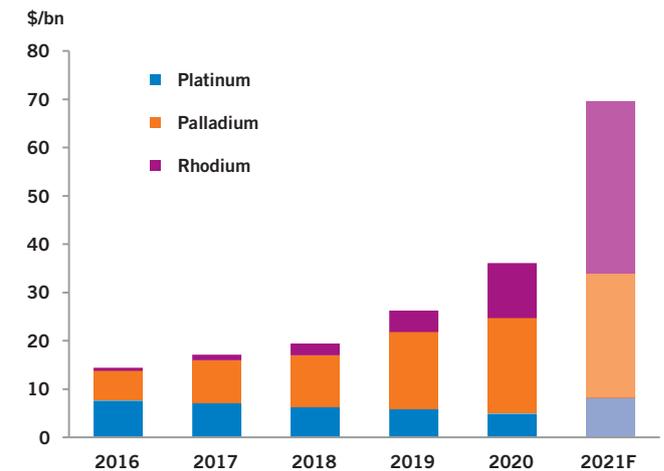
Source: SFA (Oxford), Bloomberg

China auto sales



Source: SFA (Oxford), Bloomberg

Industrial PGM costs



Source: SFA (Oxford)

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