Heraeus



5th September 2022

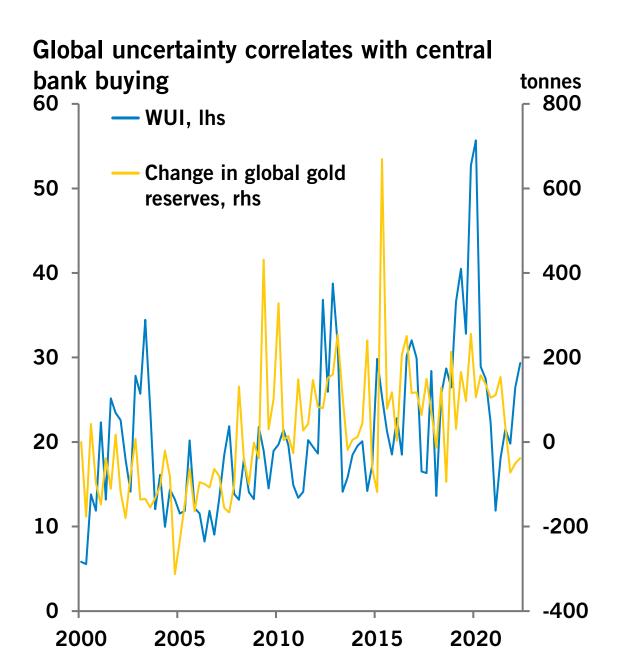
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MARKET SPOTLIGHT

Instability and inflation hedging buoying central bank gold buying

Central bank gold reserves grew by 430 t in 2021 and could be on track to exceed that this year. Gold purchasing by the world's central banks has been on an upward trend since the 2008 global financial crisis and peaked at over 35,600 t by the end of 2021 (source: IMF). The Thai central bank recorded the largest increase in holdings last year of 90.2 t. During H1'22, additions to reserves totalled 270 t – approximately equivalent to the five-year average for January-June – showing that buying remains strong in the face of looming recessions in the US and the Eurozone.



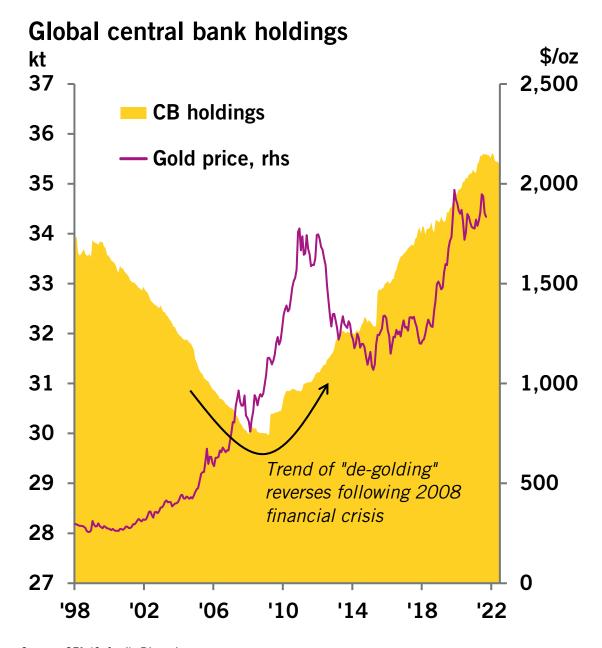
Source: SFA (Oxford), World Uncertainty Index. Note: The WUI is computed by counting the percent of the word "uncertain" (or its variant) in the Economist Intelligence Unit country reports. The WUI is then rescaled by multiplying by 1,000,000. A higher number means higher uncertainty and vice versa.

Inflation and geopolitical risk are more important to central bankers now than in the last two years.

The World Gold Council's survey of central bankers earlier this year highlighted gold's performance during crises as a major factor in gold holdings policy. Inflation is expected to remain high in the medium term as evidenced by the Fed's renewed hawkishness and skyrocketing European energy prices. Aside from offering reserve diversification and financial stability, gold's performance in uncertain and volatile market conditions such as a global recession is valued by central banks.

Currency risk increases during recessions, central banks buy gold to help offset this. The risk of holding a devaluing currency in reserves can be compensated for by increasing the proportion of gold. For example, the central bank of Bolivia earlier this year announced a plan to begin purchasing domestically produced gold (2021: 46 t) to strengthen and improve the liquidity of its reserves considering the pandemic and the war in Ukraine. Bolivia last recorded an increase in its gold reserves in 2013 with a 0.2 t purchase (source: IMF).

An increase in central bank gold demand is likely this year, but will need some further one-off purchases. The first half of 2022 was dominated by regular purchases from Turkey (totalling 63.5 t) and one-off acquisitions by Egypt (44.2 t) and Iraq (34 t). The ongoing political and economic instability is likely to result in regular purchasers Turkey, India and Uzbekistan continuing to bolster gold reserves in H2'22.



Source: SFA (Oxford), Bloomberg

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PRECIOUS METALS REVIEW Gold

Au

	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	1,716	-1.20%	1,746	29/08/2022	1,689	01/09/2022
€/oz	1,711	-1.51%	1,744	29/08/2022	1,695	01/09/2022

Investors in gold ETFs reduced their holdings for a fourth consecutive month in August, with net sales of 1.5 moz. The tension around Ukraine may have contributed to the ETFs gaining over 8 moz in the first four months of the year, but since then global gold ETF holdings have fallen by 6.8 moz. That still leaves total holdings 1.2 moz higher than at the start of the year. The gold price has been trending down as the Fed has been raising interest rates rapidly in an attempt to bring down inflation. This has resulted in a much stronger dollar, which has been a headwind for gold. If the gold price fails to hold support at \$1,675/oz, further downside is likely which will probably be accompanied by more sales from ETFs.

Exports of gold jewellery from India are rising. For the period from April to July exports of plain gold jewellery were up 23% year-on-year in dollar terms to \$1,322 million (source: Gem and Jewellery Export Promotion Council), which in volume terms equates to an increase of around 4.5 t, to 22.7 t. This was attributed to the trade agreement between India and the UAE that came into force in May this year. India is known for its significant domestic jewellery demand, which was 611 t last year (source: World Gold Council), but as a major fabrication centre exports are also important for the Indian jewellery industry.

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PRECIOUS METALS REVIEW

Silver

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			CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
		\$/oz	18.22	-4.20%	18.91	29/08/2022	17.56	01/09/2022
		€/oz	18.16	-4.52%	18.90	29/08/2022	17.58	01/09/2022

Ambitious plans for 5G could add to electrical silver demand in India. Mukesh Ambani, head of Reliance Industries, has announced a \$25 billion plan to roll out a 5G network, starting in India's major cities and expanding it to the rest of India by the end of 2023. The company is working with Google on an affordable 5G smartphone for the Indian market. The telecom subsidiary Reliance Jio was the biggest spender in the government's recent auction of spectrum for 5G. Other large telecom companies also acquired spectrum and will no doubt also be rolling out their own 5G networks.

Silver electrical and electronics demand expanded by 10% in 2021 to around 335 moz, over 25% of total global silver consumption (source: The Silver Institute). The difficult economic conditions this year may mean that electrical and electronic demand stalls. Smartphone shipments declined in Q2'22 for the fourth consecutive quarter and developments in India may not be in time to help this year. However, with a rebound in smartphone sales expected next year and the rollout of the base station network, silver demand could receive a boost in 2023.

The silver price has fallen to a new low for the year, and, as with gold, investors have been selling their ETF holdings. Total silver ETF holdings have fallen by 113 moz to 761 moz in the first eight months of the year, after dropping by 19 moz in August. The price decline has also seen speculative futures positions on COMEX turn net short again. Silver has become oversold, so a short-term bounce is possible.

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PRECIOUS METALS REVIEW

Platinum

/6	Pt							
			CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
		\$/oz	846	-3.29%	876	29/08/2022	821	01/09/2022
		€/oz	843	-3.58%	873	29/08/2022	827	01/09/2022

Northam Platinum's expansion projects help to offset lower production across South Africa. Northam improved its 4E (Pt, Pd, Rh, Au) refined output by 3.7% year-on-year in FY'22 to 716 koz. This included a modest 1.7% rise in refined platinum to 424 koz, from 417 koz in the previous year. The increase in refined metal production came as a result of the company's expansion projects at Zondereinde West and Booysendal South. The slight increase in output year-on-year will offset some of the production lost elsewhere in South African mines in the last year.

Global platinum mine supply is forecast to fall by more than 4% to 5.9 moz in 2022 thanks to a myriad of operational challenges faced by the South African miners and the boost to 2021's figure from stock being processed. Sibanye-Stillwater is behind schedule to hit the lower end of guidance by the end of the year. Impala Platinum's results for FY'22 recorded a decrease in refined platinum production of 6%, from 1,517 koz to 1,426 koz, in the year ended 30 June 2022. Impala cites difficulties with industrial action and community activism, combined with power supply outages stemming from Eskom's load-shedding earlier in the year, as reasons for the loss of production, primarily from the Impala Lease Area shafts. Anglo American Platinum's Mogalakwena mine also suffered from adverse weather early this year that contributed to a year-on-year reduction of 20% of platinum in concentrate during H1'22. Northam's operational guidance for the current financial year is 770-

810 koz 4E from its own operations, including ~455-480 koz of refined platinum – which would be a 13% increase. Despite lower output at many South African mines, the platinum market is forecast to be in a surplus of around 750 koz this year. The oversupplied market will likely keep downward pressure on the platinum price in the short to medium term.

Platinum fell to a two-year low of \$821/oz, having shed >\$140/oz since mid-August. Negative sentiment around the state of the global economy and an exceptionally strong dollar contributed to this week's decline.

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PRECIOUS METALS REVIEW

Palladium

40	Pd							
			CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
		\$/oz	2,036	-4.22%	2,172	30/08/2022	2,002	01/09/2022
		€/oz	2,030	-4.55%	2,165	30/08/2022	2,008	02/09/2022

Impala's Canadian operations have not escaped mine disruptions. Impala Canada produces mainly palladium from its mine. Production for FY'22 was 213 koz of palladium, plus 19 koz of platinum and 17 koz of combined rhodium, iridium, ruthenium and gold. This represents a 6.4% year-on-year decrease of palladium in concentrate, despite a 4% increase in head grade within the mine. Mining was impacted by several factors including an eight-day power outage in April owing to an extreme storm, Covid restrictions and personnel shortages. The company should overcome these hurdles and production guidance is raised to 250-280 koz 6E (~215-240 koz Pd) for FY'23. Owing to reduced production in Canada and South Africa, the palladium market is forecast to be close to balance in 2022, from an initially anticipated surplus.

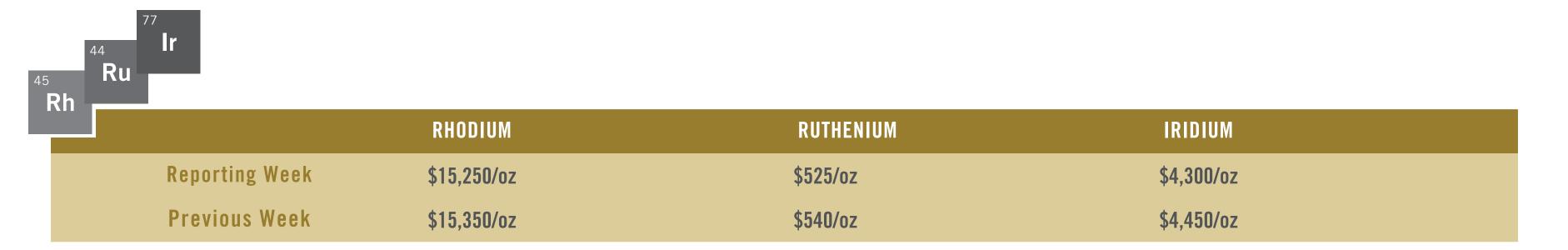
Battery electric car sales reached 10% of global market share for the first time in July. This has been aided by the constraints to ICE vehicle production. China is at the forefront of the market, registering 432,000 battery electric passenger car sales in the month. This represents a 108% hike in sales year-on-year and takes year-to-date sales in China to 2.38 million units – 20% of all passenger car sales (source: China Association of Automobile Manufacturers). The rapid uptake of BEVs instead of petrol cars in China is not yet outweighing the expansion of the auto market as a whole, as autocatalyst demand is forecast to continue growing in 2023. The tight palladium market has supported a high palladium price, but the deteriorating economic environment could drag the price lower.

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PRECIOUS METALS REVIEW

Rhodium, Ruthenium, Iridium



Rhodium production from South Africa could rise next year, as this year's operational challenges are overcome and some mines lift output. Northam reported a 12% increase in rhodium production for FY'22, to 71,315 oz from 63,860 oz in the previous year, and intends to raise output again in the next 12 months. More than 80% of the ore Northam milled in the last financial year was from the UG2 Reef (the rest was Merensky) and resulted in rhodium contributing >50% of revenue to the 4E (Pt, Pd, Rh, Au) basket. Rhodium is more highly concentrated in the UG2 orebody (as opposed to the Merensky Reef) of the Bushveld Complex in South Africa which also contains fewer base metal by-products.

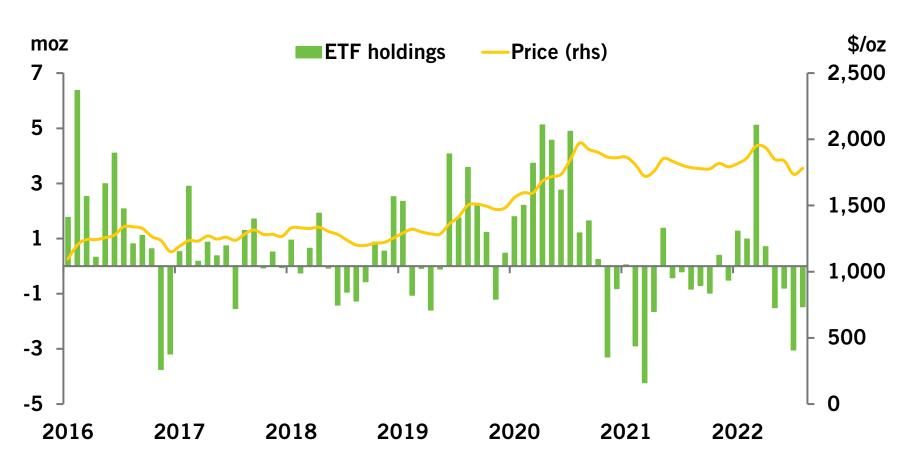
All of the minor PGMs saw price declines last week. Rhodium fell by 0.7%, ruthenium by 2.8% and iridium slid the furthest, closing the week 3.4% down.

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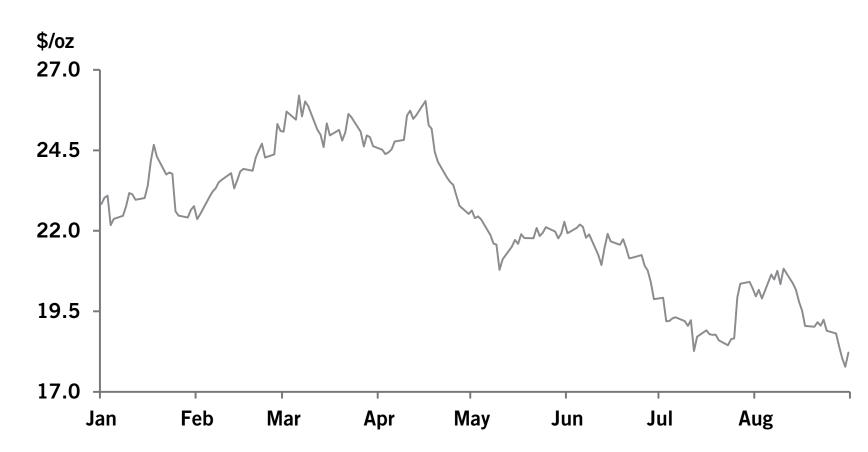
TRENDS AND INVESTMENTS

Monthly change in global gold ETF holdings



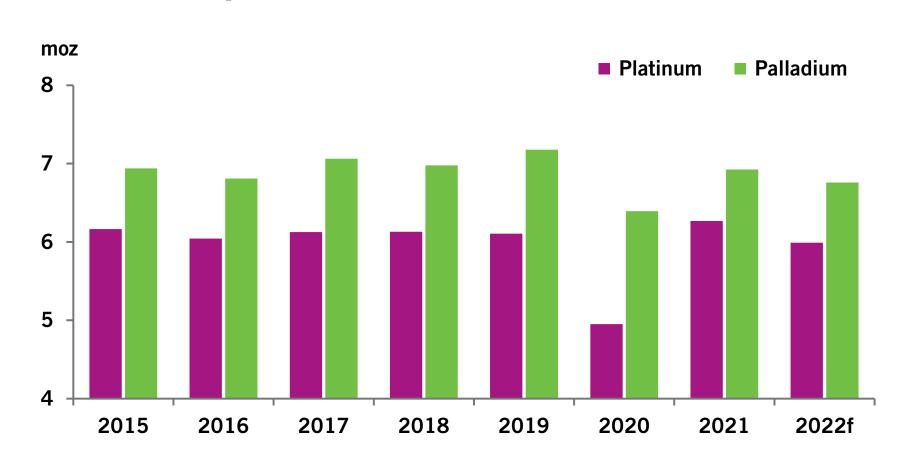
Source: SFA (Oxford), Bloomberg

Silver price



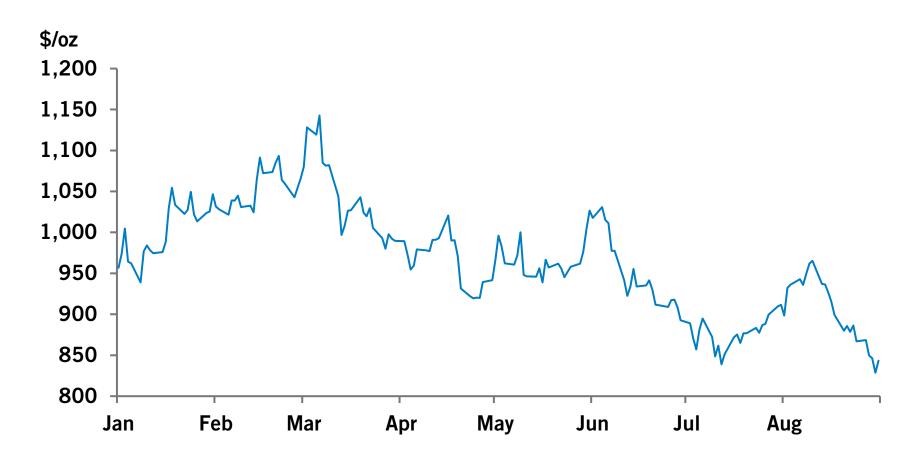
Source: SFA (Oxford), Bloomberg

Global PGM production



Source: SFA (Oxford)

Platinum price



Source: SFA (Oxford), Bloomberg

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