

HERAEUS PRECIOUS APPRAISAL

Heraeus

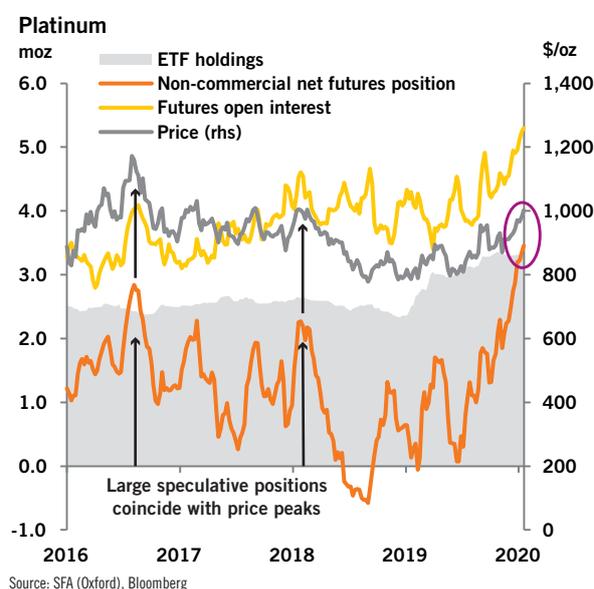
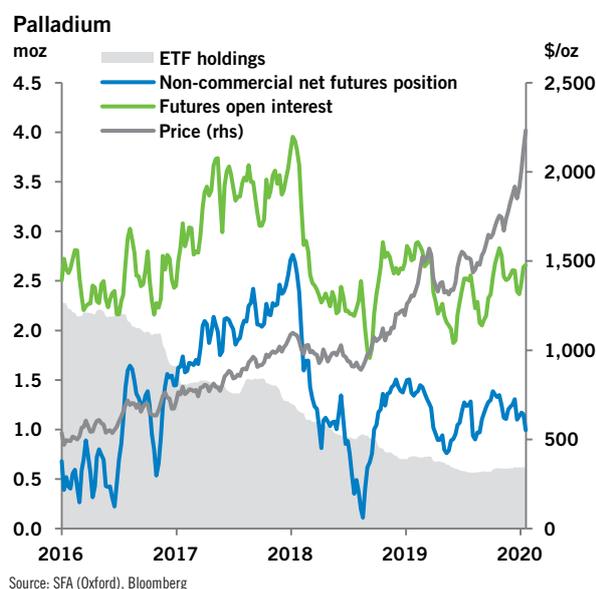
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MARKET SPOTLIGHT

Palladium's outperformance over platinum to continue in 2020

The palladium market is predicted to have a large deficit this year owing to strong automotive demand following the implementation of tighter emissions legislation. ETF investors have been taking profits and providing metal to the market. ETF holdings fell by 87 koz in 2019, for a fifth consecutive annual decline. This was a much smaller drop than in previous years and left global holdings at just 617 koz. However, speculative futures positions did not follow the palladium price higher last year. There is a shortage of palladium ingot which considerably tightened the market, taking short-term lease rates to over 30% and the spot price to over \$2,500/oz. While the extreme market tightness has eased and the palladium price has pulled back, **the fundamental picture is still supportive of a high price.**



Fundamentally, the platinum price has little upside. With a further decline in automotive and jewellery demand expected in 2020, the platinum market is predicted to have an industrial surplus of over 1 moz again. ETF investors bought 960 koz of platinum in 2019. At the start of last year platinum was particularly cheap, trading at less than \$800/oz, and 692 koz of ETF investment occurred in Q1. Some investment may have been in anticipation of platinum being used as a substitute for some palladium in autocatalysts, although that is still some way off. Even at closer to \$1,000/oz, platinum is cheap relative to palladium and gold, so those with a longer-term view might still want to add to their holdings.

Speculative net long positions in platinum futures are at a record high, as is open interest. Although the price broke through \$1,000/oz, it did not climb above the price highs set in 2017-2018 around \$1,030/oz, which represent a region of chart resistance. Each of those price peaks was accompanied by a large net long futures position and followed by a fall in the price. **The platinum market needs investors to buy up the surplus again this year, but it may not help the price.**



PRECIOUS METALS REVIEW

79 Au Gold

	Close	Weekly change	High	Date	Low	Date
\$/oz	1,583	0.65%	1,589	31/01/2020	1,563	29/01/2020
€/oz	1,428	0.13%	1,439	27/01/2020	1,419	29/01/2020

Chinese consumer gold demand is likely to be weak in the first quarter of 2020 owing to the effects of the coronavirus outbreak. On top of the travel restrictions which are in place across 20 Chinese cities, businesses in Shanghai have been instructed to remain shut for a further week (beyond the Lunar New Year). The outbreak comes at a time of high gold prices and prevailing weak consumer sentiment; consumer purchasing has the potential to be seriously affected. Q1 has historically been a seasonally strong period for Chinese consumer gold sales, with demand in Q1'19 reaching 254.8 t (30% of annual demand). News of the coronavirus saw safe havens such as gold and bonds gain as traders reduced exposure to riskier assets and equity markets sold off. While that situation remains, gold can keep climbing.

Annual gold demand declined by 1% in 2019 to 4,355.7 t (source: World Gold Council). Strong investor demand was outweighed by poor consumer sentiment, particularly in the largest jewellery markets of China and India. Annual jewellery demand slumped by 6% to 2,107 t year-on-year and was heavily affected by the high gold price and a slowing economy causing a lack of consumer demand. Indian demand fell by 9% to 544.6 t (-53.4 t), while Chinese demand was down by 7% to 637.3 t (-49 t). In addition to economic factors, the changing tastes of younger generations reduced demand for traditional heavier (higher gold content) jewellery in China. Slow economic growth and a high gold price mean consumer demand may not see much improvement on last year.

47 Ag Silver

	Close	Weekly change	High	Date	Low	Date
\$/oz	18.01	-0.22%	18.34	27/01/2020	17.35	29/01/2020
€/oz	16.26	-0.72%	16.64	27/01/2020	15.77	29/01/2020

Silver supply falls short of guidance from the world's largest producer. Fresnillo's annual silver production in 2019 was 54.6 moz, an 11.6% decrease from the previous year, and has been attributed to lower ore grades and a lower volume of ore being processed. At the start of 2019, production guidance was 58-61 moz, but was reduced to 55-58 moz after Q2. Fresnillo is the world's largest primary silver producer, accounting for around

7% of global silver mine supply. Other key producers have also reported lower than expected silver production for last year, which suggests that 2019 is likely to be the fourth consecutive year of declining mine supply. The silver price has been volatile, but it lost ground on gold last week and is expected to continue that underperformance.

78 Pt Platinum

	Close	Weekly change	High	Date	Low	Date
\$/oz	960	-4.54%	998	27/01/2020	957	31/01/2020
€/oz	866	-5.04%	906	29/01/2020	865	31/01/2020

The European car market is set to shrink in 2020. Europe's auto industry is likely to contract by 2% this year (source: ACEA), the first downturn in car sales in seven years. The market grew by 1.2% in 2019 to 15.34 million units. However, new CO2 emission regulations that came into effect in January are expected dampen demand in 2020. The EU has limited the amount of CO2 that car fleets can emit on average to 95 g/km (down from around 120 g/km last year), or face steep fines. As a result, battery electric vehicle (BEV) demand is expected to increase by 32% this year (source: BloombergNEF). There is an opportunity for automakers to push sales

of new diesel cars this year in order to meet the new emissions target. Diesel demand will also be supported by the growing sales of SUVs which have limited electrified variants. However, the market share of diesel car sales in Western Europe is still forecast to decline slightly this year. The region represents the largest autocatalyst demand sector for platinum, at around 1 moz annually, although this is forecast to weaken in line with demand in Western Europe. With global demand (excluding investment) predicted to shrink again this year, the platinum price is expected to weaken further.



PRECIOUS METALS REVIEW

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Pd Palladium

	Close	Weekly change	High	Date	Low	Date
\$/oz	2,299	-5.09%	2,396	27/01/2020	2,251	28/01/2020
€/oz	2,075	-5.79%	2,178	27/01/2020	2,046	30/01/2020

Nornickel provides temporary relief to the palladium market. Spot palladium traded at over \$2,500/oz on 20 January as a shortage of ingot drove up short-term lease rates to over 30%. The start of the Chinese New Year holiday may have eased some of the buying pressure as the price has pulled back and lease rates have dropped. Nornickel's subsequent announcement that its Global Palladium Fund would deliver 3 t (~96 koz) of palladium ingots to the market from its current stock will also offer further short-term relief. The company also intends to increase the proportion of ingot in its output this year. Nornickel maintained its production guidance of 2.7 moz of palladium for 2020. The company is the world's largest producer of palladium, accounting for around 38% of global mine supply. While sufficient ingot is available the price could correct further in the near term, but the market is forecast to have another sizeable deficit this year which will keep the price trading at a high level.

The coronavirus outbreak will have a negative impact on economic activity in China given the travel bans, and potentially on other countries too. It is too early to be

sure of the overall impact, but car sales and possibly metal demand could be subdued for a while if it takes some time to bring the virus under control. Once that happens, activity should rebound as purchases that were delayed can finally be made, so the impact over the whole year might not be very large. China is the largest auto market with sales of 21.4 million passenger cars in 2019 accounting for 22% of global palladium demand. Even with stagnant car sales China's palladium usage is projected to rise by around 15% this year since tighter emissions legislation requires higher catalyst loadings. If passenger car sales were to fall by 25% in China this year the palladium market would still be in deficit.

Anglo American Platinum increased palladium production by 12% last year. The company's total refined PGM production (expressed as 5E + Au) was 4,480.7 koz in 2019, an 11% rise year-on-year. This included 12% growth in refined palladium output to 1,428 koz. Refined palladium output for 2020 is likely to be between 1.2 and 1.4 moz.

Rh Rhodium, Ruthenium, Iridium

	Rhodium	Ruthenium	Iridium
Reporting week	\$10,750/oz	\$260/oz	\$1,510/oz
Previous week	\$10,450/oz	\$260/oz	\$1,510/oz

Electricity supply problems in South Africa hinder rhodium output. Anglo American Platinum's full-year refined PGM (5E + Au) output was 4.48 moz, after 216 koz was held up due to load-shedding-related events throughout the year. As a result, 89 koz of PGMs has built up in work-in-progress inventory and will be refined in 2020, including an estimated 6 koz of rhodium. Amplats is the second largest producer of rhodium in the world, accounting for almost a quarter (184 koz) of global

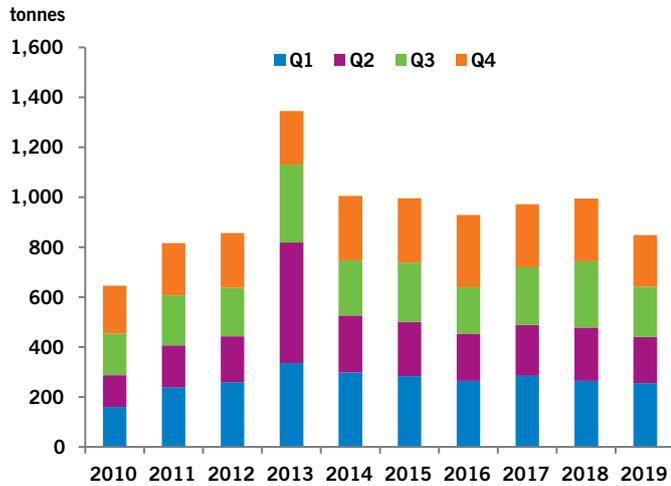
mine supply in 2018. The lack of Chinese buyers has not yet translated into a lower rhodium price and while the metal continues to be sought after, the price can remain at a very high level.

Rhodium continued its spectacular rally, gaining another \$300 (+2.8%) to close the week at \$10,750/oz. Iridium and ruthenium remained unchanged.



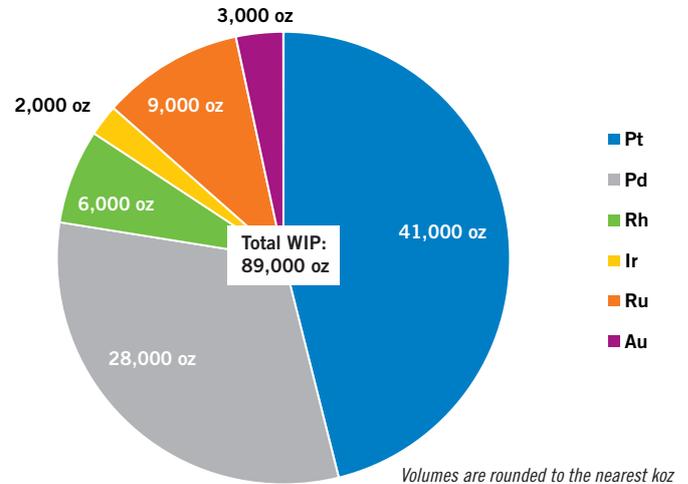
TRENDS AND INVESTMENTS

China consumer gold demand



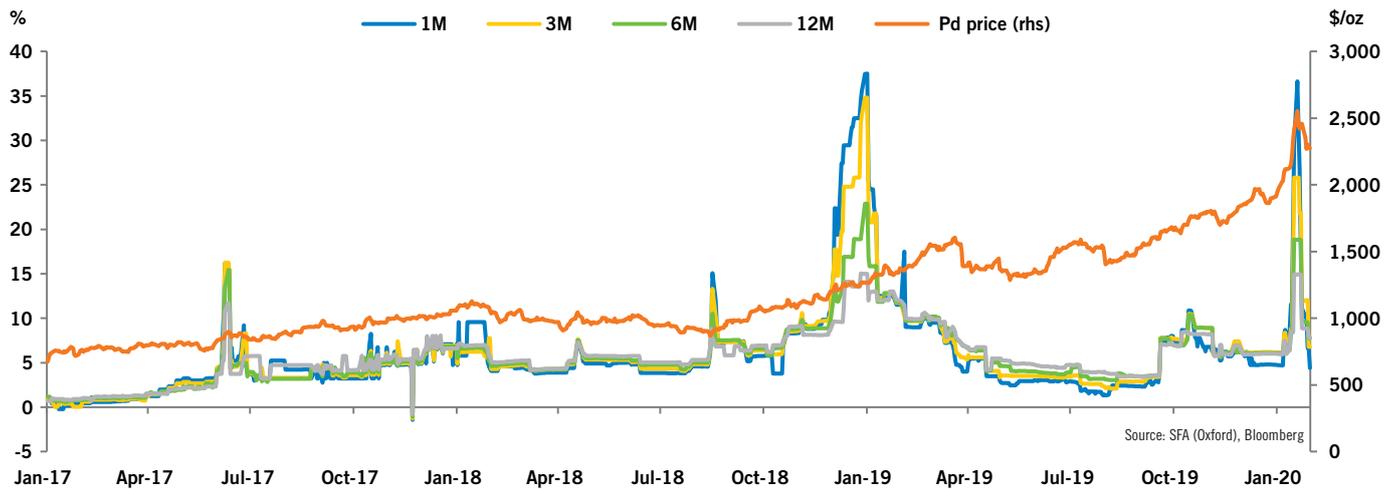
Source: SFA (Oxford), World Gold Council

AAP 2020E work-in-progress stock



Source: SFA (Oxford), Anglo American Platinum

Palladium lease rate indicator



Source: SFA (Oxford), Bloomberg

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