

HERAEUS PRECIOUS APPRAISAL

Heraeus

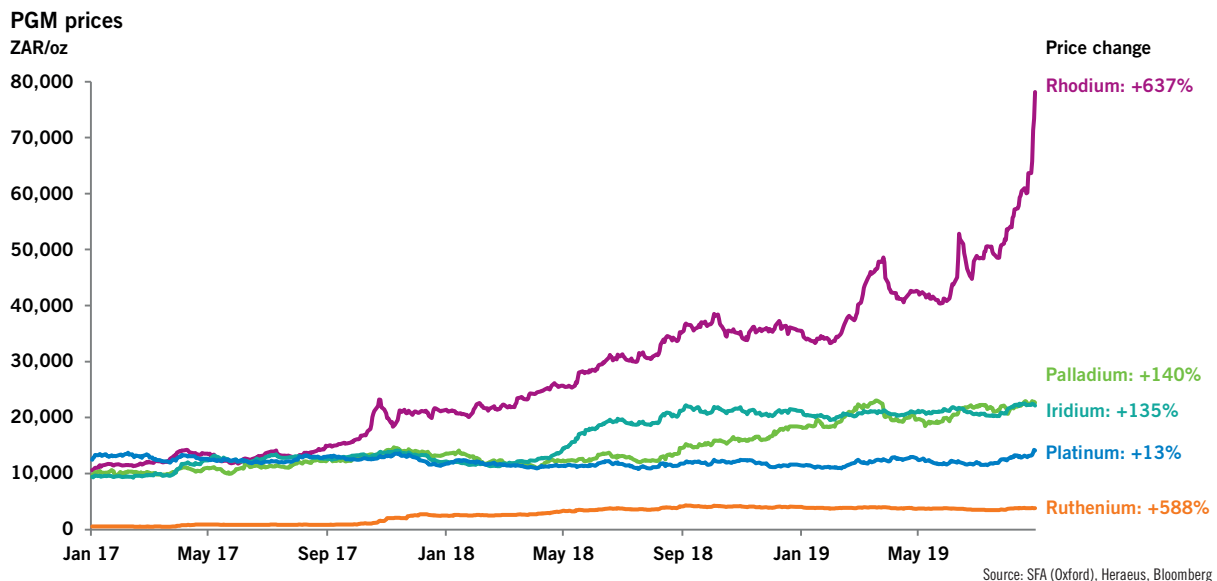
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MARKET SPOTLIGHT

Northam's rise – it's elementary

Northam Platinum Ltd is expanding its PGM production. It is the fourth-largest PGM producer in South Africa, with two operating mines, Booyssendal and Zondereinde. Mining occurs from the Merensky and UG2 ore bodies. The UG2 ore contains a higher proportion of small PGMs (Rh, Ru, Ir) with up to four times as much rhodium as Merensky ore. The Booyssendal mine is expanding production and mining more UG2 ore which is lifting the output of small PGMs. Northam's production of rhodium, ruthenium and iridium increased by 24%, 10% and 27% respectively in its financial year to June. Heraeus has a long-term partnership with Northam covering metal offtake and refining, and made a joint investment in a new smelter that can process the growing volumes of UG2 ore.



The high rhodium and palladium prices have incentivised the restart of mining at the Eland mine which has been closed since 2015 and was acquired by Northam in 2017. Northam also plans to use a more robust, lower-cost mining method. The company is already reprocessing tailings which will produce a small amount of PGM concentrate and initial underground mining will start in 2020.

High PGM prices will keep South African rhodium, ruthenium and iridium production stable. With restructuring planned at other companies' operations, it is possible that rhodium, ruthenium and iridium production could each slip by 2% in South Africa next year. However, the miners' revenues are being supported by the high rhodium, ruthenium, iridium and palladium prices and a weaker rand, so those plans may well change and shafts previously scheduled for closure might stay open. Mine areas closed due to lack of profitability when the rhodium price was around \$1,000/oz could be reopened, as shown by Northam reopening Eland and RBP restarting UG2 mining at its South shaft. **That said, the iridium, ruthenium and rhodium markets are close to balance keeping prices firm.**



PRECIOUS METALS REVIEW

79 Au Gold

	Close	Weekly change	High	Date	Low	Date
\$/oz	1,527	-0.04%	1,550	29/08/2019	1,520	29/08/2019
€/oz	1,390	1.40%	1,399	29/08/2019	1,370	29/08/2019

Bullishness on gold is becoming extreme, and the rally could pause because so much positive sentiment leaves very few people who are not already long gold that can buy and sustain the rally. Record levels of negative yielding debt, the inverted yield curve and the rising probability of recession in the US, along with increasing tariffs on trade between China and the US, are all well-known and should be priced in. Near term, what new economic or political development can push the gold price higher?

Technical indicators suggest that the rally is running out of steam. The relative strength index (RSI) shows that gold is overbought and while the gold price is making new highs, the RSI is not which indicates a loss of momentum. The speculative futures net long position moved closer to its record level, hitting 30.0 moz on 20 August. Positioning has only been higher than this for three weeks in 2016. Neither of these situations means that the gold price cannot go higher. In a strong uptrend a new record net long position is entirely possible. However, they are a warning that the fastest gains in the rally may have already occurred.

47 Ag Silver

	Close	Weekly change	High	Date	Low	Date
\$/oz	18.38	5.49%	18.66	29/08/2019	17.52	26/08/2019
€/oz	16.73	7.02%	16.85	29/08/2019	15.75	26/08/2019

Is the silver price very overbought, having rallied hard last week? Technical indicators show upside momentum could slow. Silver outperformed gold and took the gold:silver ratio down to 83, which is still well above its long-run average of 63. The speculative silver futures net long position has increased but, unlike gold, is nowhere near its record, giving it some room for further expansion.

Indian jewellers are stocking up ahead of the festival season. Reports from India note that jewellers have been stocking up on silver coins and utensils as the price has rallied in anticipation of increasing demand when the festival season begins in a month. Import statistics show that silver jewellery imports are up 4% year-on-year in the four months from April to July.

78 Pt Platinum

	Close	Weekly change	High	Date	Low	Date
\$/oz	936	8.86%	941	30/08/2019	853	26/08/2019
€/oz	852	10.42%	853	30/08/2019	768	26/08/2019

Platinum finally joined the precious metals rally as its price jumped \$84/oz last week, taking it above its high of the year of \$914/oz in April, and to its highest level since mid-2018. The metal is cheap relative to gold and palladium and ETF holdings have risen strongly this year. However, with the price over \$900/oz, ETF gains have slowed down as they did in April. Given the weak fundamental outlook, it is hard to see much more upside for the price from here.

Northam Platinum increased platinum output by 21.6% for the financial year ended June 2019. Total platinum metal sold was 352 koz, compared to 293 koz in the previous financial year. Higher PGM volumes from both Booyendal and Zondereinde resulted in record production growth of 7.4% to 520 koz 4E (4E = Pt, Pd, Rh, Au) from 484 koz 4E in 2018. Northam produces around 6% of global platinum supply.



PRECIOUS METALS REVIEW

46

Pd Palladium

	Close	Weekly change	High	Date	Low	Date
\$/oz	1,540	5.05%	1,547	30/08/2019	1,462	28/08/2019
€/oz	1,401	6.63%	1,404	30/08/2019	1,317	26/08/2019

High palladium price incentivising new projects.

Anglo American Platinum (Amplats) has acquired two prospecting rights from Atlatsa Resources. Kwanda North and Central Block will be absorbed into the adjacent Mogalakwena mining right, Amplats' flagship mine. Mogalakwena produced 260 koz of palladium in H1'19, ~8% of global mine production of palladium. The company is already considering expanding Mogalakwena and the acquired blocks will provide scope for less capital-intensive expansion into shallower reserves. The palladium-rich resource gives Amplats the potential to better align production with demand in the longer term. It could take several years to expand palladium production further to help fill the ongoing structural deficit projected for the market. In the near term robust demand is keeping the market in deficit and the price elevated.

Sibanye-Stillwater's PGM production in line with guidance at Stillwater

despite a slow operational start to the year and challenging ground conditions. Palladium production in H1'19 remained steady at 221 koz compared to 228 koz in H1'18. Stillwater accounts for 6% of the global supply of palladium and over 50% of the company's palladium production.

Sibanye-Stillwater's South African PGM production (4E)

was down 4% from H1'18 at 547 koz, but is still on track to meet annual guidance of 1-1.1moz. No production guidance has been given for the recently acquired Marikana operation. The company noted that "a number of shafts have finite reserves and derive limited benefit from higher PGM basket prices", which suggests that there may be some restructuring to come.

77

Ir

44

Ru

45

Rh

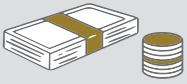
Rhodium, Ruthenium, Iridium

	Rhodium	Ruthenium	Iridium
Reporting week	\$5,150/oz	\$250/oz	\$1,460/oz
Previous week	\$4,175/oz	\$250/oz	\$1,460/oz

Weakness in China hits ruthenium demand. Yageo Corporation, the largest global supplier of chip resistors, reported a 12.6% decrease in sales of chip resistors in Q2'19 from the previous year. Yageo represents 34% of the global chip resistor market. Ruthenium oxide is used as resistive paste in thick film resistors. Yageo's chip resistor revenues hit a multi-year low as China's market share slumped. Sales to China, which dominated revenue in Q2'18 with 81% of total sales, have dropped to 42%, reflecting slowing economic growth.

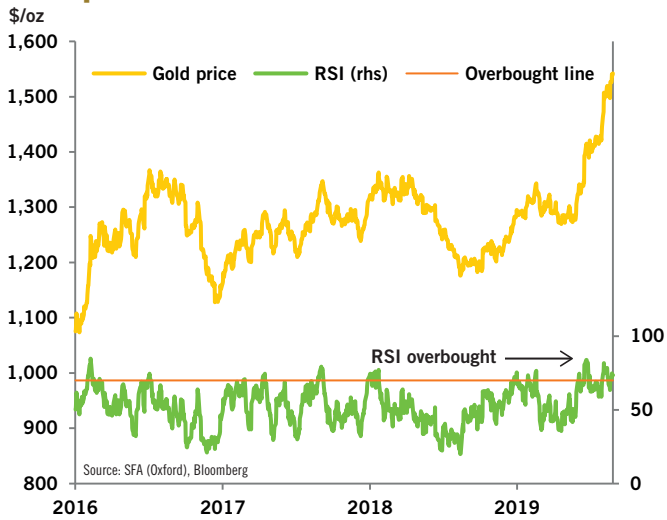
Rhodium's rally accelerated, with the price gaining \$975/oz (23%) last week. It may be that the need to meet tighter emissions standards is keeping the price well bid despite the current soft spot in car sales.

Ruthenium and iridium prices remain unchanged.



TRENDS AND INVESTMENTS

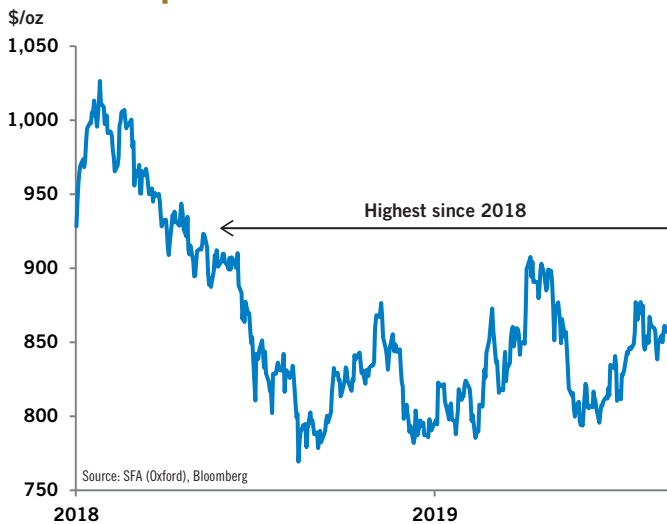
Gold price and RSI



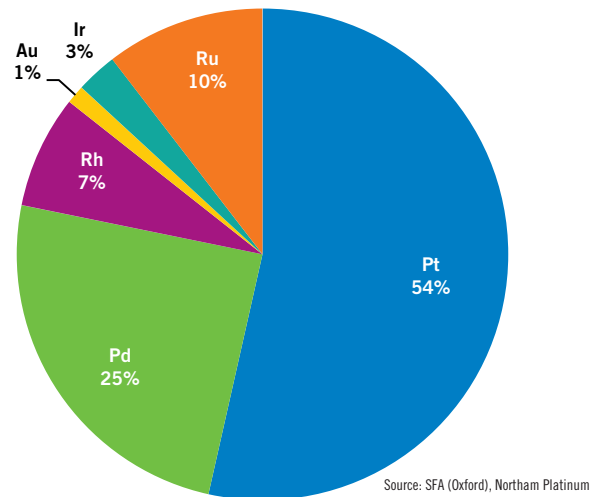
Silver price and RSI



Platinum price



Northam FY2019 production



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