HERAEUS PRECIOUS APPRAISAL

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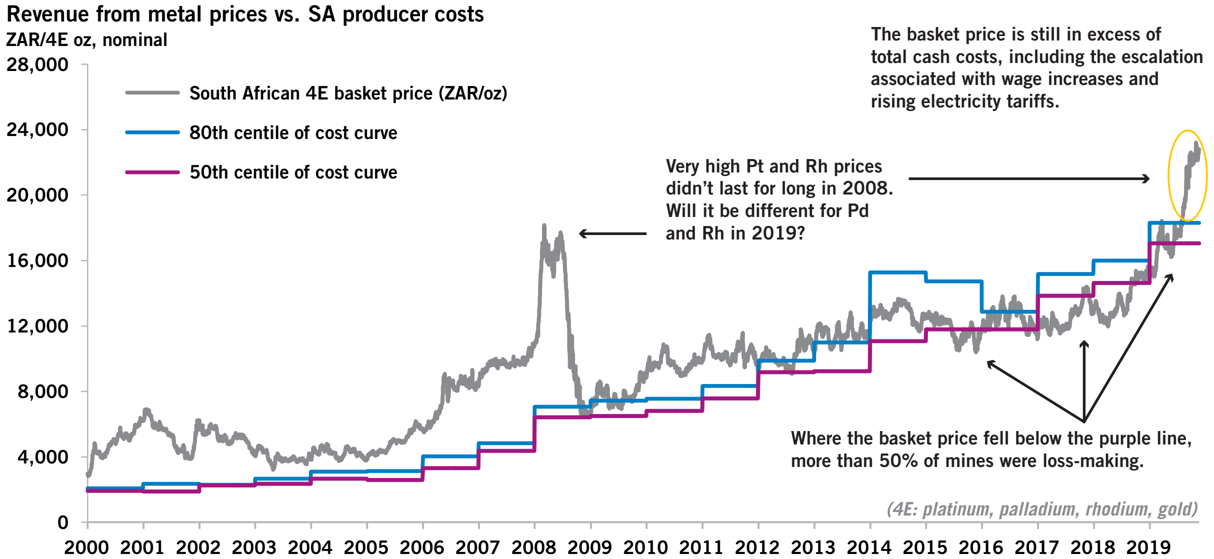
MARKET SPOTLIGHT

Palladium and rhodium prices hoist South African miners into profit

A high rand basket price is increasing profit margins. After five years of cost pressures and losses for the higher-cost producers, South African PGM miners have entered a phase of profitability. The South African PGM basket price (the mine revenue from the mix of metals) has been on an upward trend since August 2018 as the prices of palladium (+150%) and rhodium (+250%) have continued to appreciate. The basket price is up 48% this year, with platinum, palladium and rhodium each now accounting for around a third of revenue.

Rising operational costs can be accommodated while the basket price is high. The recent wage agreements between Sibanye-Stillwater, Anglo American Platinum, Impala Platinum and the AMCU will increase labour costs by an average of 6.6% p.a. over the next three years. Labour currently accounts for more than 40% of the total costs for producers. Since 2002, PGM industry wages have increased on average by 9.3% p.a., faster than the South African consumer price index (CPI) which has averaged +5% over the same period (source: Platinum Wage Negotiations). Eskom tariffs are an additional expense, rising almost three times faster than the rate of inflation each year. However, the high basket price that miners are receiving, aided by a weaker rand, is currently exceeding the escalating cost of labour and utilities.



Source: SFA (Oxford), company reports, Bloomberg

However, there has not been enough capital investment in recent years to secure future production levels. Stay-in-business capital expenditures were 22% lower in 2018 than in 2011. Owing to the lack of capital expenditure, after 2019 South African platinum production is projected to drop by 90 koz p.a. on average over the next five years.

Revenue from high basket prices has significantly boosted profits this year and is incentivising mine restarts. However, unit costs are unsustainably high and a return to **$3,500/oz rhodium and $1,500/oz palladium prices would put the basket price under the 80th centile of the cost curve and result in a return to cost cutting and mine closures.**

PRECIOUS METALS REVIEW

79 Au Gold

	Close	Weekly change	High	Date	Low	Date
$/oz	1,464	-0.17%	1,479	20/11/2019	1,456	18/11/2019
€/oz	1,327	-0.01%	1,337	20/11/2019	1,317	18/11/2019

More sideways trading for gold last week. However, further downside is possible in the near term. The speculative futures position on COMEX was only marginally lower at 26.7 moz on 12 November, which corresponded with gold's lowest price since August. That leaves a fairly large net position which needs to be reduced before gold can stage a sustainable rally. At gold's price low for the year in April, the specs' net long position was under 4 moz.

47 Ag Silver

	Close	Weekly change	High	Date	Low	Date
$/oz	17.04	0.42%	17.24	22/11/2019	16.75	18/11/2019
€/oz	15.45	0.58%	15.60	21/11/2019	15.14	18/11/2019

US credit cuts could reduce silver PV demand. The US is the second-largest photovoltaic (PV) market, and cuts to the 30% investment tax credit (ITC) for solar installations pose a risk to silver demand. The US accounted for 11% of global solar installations last year (11.4 GW), and around 8 moz of silver. As Chinese installations slow, the US is predicted to become one of the main drivers of solar installations, and therefore silver demand. If Congress does not renew the ITC it starts decreasing next year and expires in 2022 for residential installations, and drops to just 10% for utility and commercial-scale projects.

Silver back above $17/oz, but for how long? The silver price managed to hold up better than gold despite the specs' net long futures position falling over 50 moz to 187 moz, the lowest level since July. As the gold price continues to fall, the silver price will follow it lower.

78 Pt Platinum

	Close	Weekly change	High	Date	Low	Date
$/oz	888	-0.73%	927	21/11/2019	879	18/11/2019
€/oz	805	-0.58%	837	21/11/2019	795	18/11/2019

Surplus market forecast for platinum in 2020. November 2019 marks five years since the founding of the World Platinum Investment Council (WPIC). The WPIC was the first to publish quarterly information on the platinum market and has launched numerous initiatives to increase the options available for investment in platinum in several markets, including the US, China and the UK. Its Q3'19 report was published last week. The record level of ETF investment in 2019 is expected to help balance the market this year. However, in 2020 the market is estimated to be in surplus. Only industrial demand is likely to increase as automotive and jewellery demand are predicted to continue to decline, albeit at a slower rate than in 2019, and investment is not expected to be close to the same level as this year.

A growing fuel cell vehicle market supports platinum-based hydrogen production. Demand for fuel cell vehicles (FCVs) is predicted to more than double over the next five years (which is in itself a driver for platinum demand in the longer term). A joint venture between ITM Power and Iwatani Corporation of America is investigating the option of a platinum-based hydrogen power plant in North America, with an interest in expanding the US hydrogen refuelling station market. If commercially viable, the facility will utilise PEM (proton exchange membrane) electrolysers which use platinum-coated electrodes to generate hydrogen.

The platinum price had a mixed week, rallying back above $900/oz before closing at $888/oz. In the medium term the price is expected to trend lower.

PRECIOUS METALS REVIEW

46 Pd Palladium

	Close	Weekly change	High	Date	Low	Date
$/oz	1,772	2.86%	1,779	20/11/2019	1,708	18/11/2019
€/oz	1,606	3.01%	1,609	22/11/2019	1,544	18/11/2019

Nornickel will produce less palladium in 2020. Norilsk Nickel (Nornickel) has forecast a 3.7% decline in its production of platinum and palladium next year due to scheduled smelter maintenance. Palladium production is estimated to be 83-86 t (2,660-2,735 koz) in 2020, but will increase to 93 t per year in 2021 and 2022. The reduced output from the world's largest palladium producer could widen the market deficit next year. This will continue to support the high price into 2020. The price has gained 46% this year owing to rising auto demand from stricter vehicle emission regulations.

No US auto tariffs is a plus for palladium. President Trump's earlier announced deadline to impose tariffs on European and Japanese auto imports has passed with no action. There was a risk that the president would impose up to a 25% tariff on the cost of foreign car imports (including parts), which would have significantly increased light vehicle prices. The US is the largest foreign market for European-built cars, accounting for 29% of the export value or 5.4 million vehicles per year (source: ACEA). The higher US prices would have inevitably reduced demand for European cars.

77 Ir 44 Ru 45 Rh Rhodium, Ruthenium, Iridium

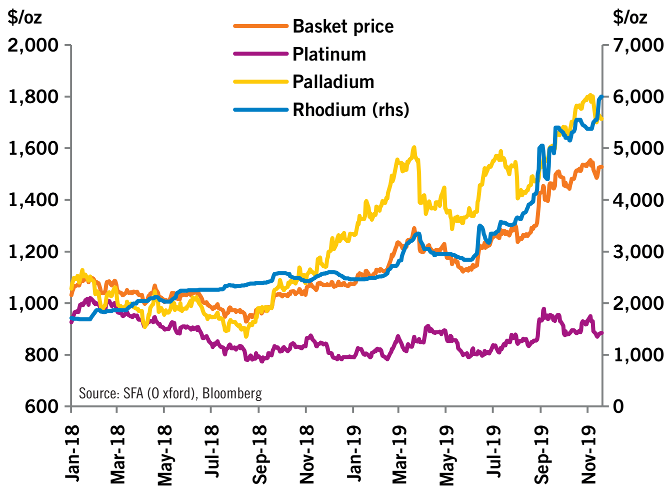
	Rhodium	Ruthenium	Iridium
Reporting week	$6,125/oz	$250/oz	$1,500/oz
Previous week	$6,050/oz	$250/oz	$1,500/oz

Higher capacity HDDs are offsetting the impact of declining sales for ruthenium. Combined shipments of hard-disk drives (HDDs) from Seagate, Western Digital and Toshiba declined by 5.6% to 83 million units in Q3, compared to a year ago. However, increased capacity is offsetting lower shipments; a higher areal density of disks, which increases storage capacity, requires more metal. Despite declining sales, total shipped capacity from the three companies reached a record 240 EB in Q3. The rise is attributed to stronger demand for high capacity enterprise-class HDDs (14-16 TB). Seagate, which has a 40% share of the HDD market, is launching 18 TB and 20 TB models in 2020. HDDs account for around 80 koz, or 7% of global ruthenium demand, but this is forecast to increase by ~25% over the next five years owing to greater capacity requirements.

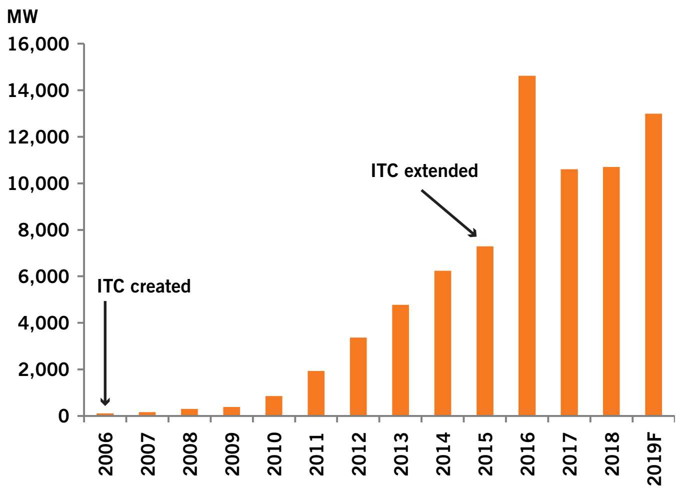
The rhodium price climbed by $75/oz last week, clearing $6,100/oz, but the ruthenium and iridium prices remain unchanged.

TRENDS AND INVESTMENTS

PGM prices vs. basket price

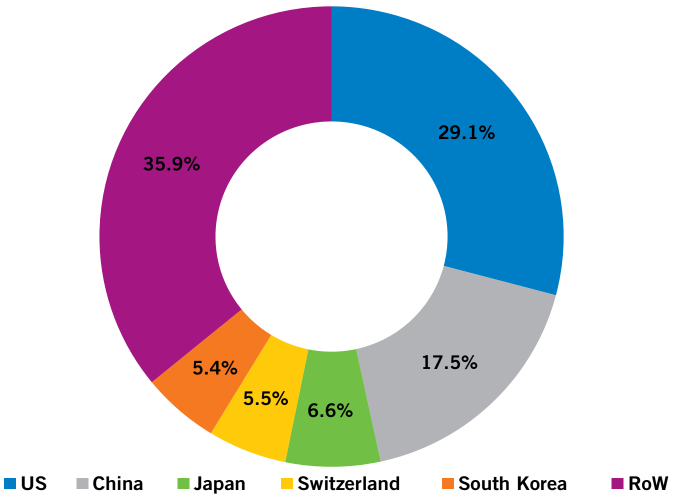


US solar installations



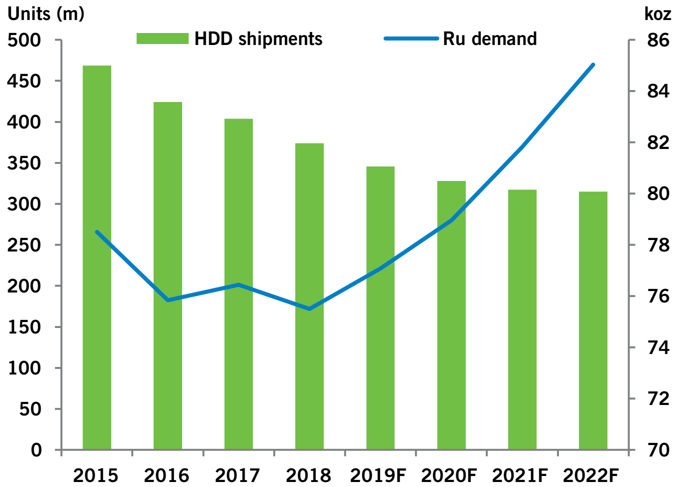
Source: SFA (Oxford), SEIA

EU foreign market car exports



Source: SFA (Oxford), ACEA

HDD shipments and Ru demand



Source: SFA (Oxford), company reports

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