



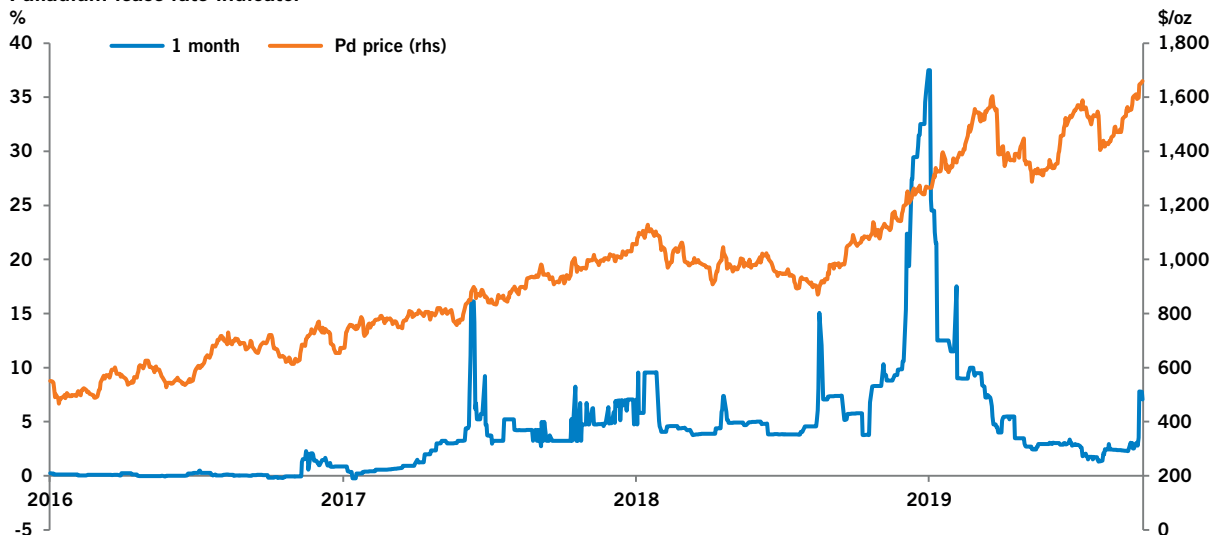
MARKET SPOTLIGHT

Physical shortages pinch palladium prices

Palladium lease rates jumped on Friday 20 September, when the price rose by \$50/oz to \$1,647/oz. This shows that the physical market has tightened again. Interestingly, sales from palladium ETFs have stalled which has closed off one source of metal. Furthermore, speculative interest has not followed the price to new highs, so perhaps investors are not chasing the price higher. In fact, speculative futures positioning on NYMEX is much lower now than in early 2018 when the price first reached \$1,100/oz. **Near term, while the market remains firm the palladium price could push even higher.**

Palladium's fundamentals are sound. China 6 legislation is being implemented nationwide from July 2020. Tighter emissions standards in the US and EU will also help to support automotive demand and Bharat 6 in India is starting in April 2020. The Chinese car market is expected to return to sales growth next year which will also lift palladium demand and widen the anticipated deficit. Even without auto sales growth, the increased use of palladium required by tighter emissions standards will keep the market in deficit. However, the risks are that global growth continues to slow and auto sales fall further which would see palladium give back some of its gains.

Palladium lease rate indicator



Source: SFA (Oxford), Bloomberg

Nonetheless, **palladium supply is growing from primary and secondary sources.** Large stocks (an estimated five months of demand) mean metal is available for end-users. Growth in supply is coming from palladium-rich projects in Russia, North America and South Africa. In addition, the high rhodium price is incentivising rhodium-rich UG2 production in South Africa which will also add to palladium supply. All these diverse sources of palladium should give end-users security of supply.

Lastly, and perhaps surprisingly, **weakening auto sales have not held back the palladium price.** The price hit a new record high despite auto sales falling year-to-date in all the major markets – China, the US and Europe. The price has responded to the market being in deficit yet again this year.



PRECIOUS METALS REVIEW

79 Au Gold

	Close	Weekly change	High	Date	Low	Date
\$/oz	1,494	-0.55%	1,536	24/09/2019	1,487	27/09/2019
€/oz	1,365	0.00%	1,395	25/09/2019	1,360	27/09/2019

Dollar gain sees gold sell off. A more risk-on outlook in the markets saw the dollar gain and gold sell off by \$26/oz last Wednesday. It seems that an agreement on trade between the US and Japan helped sentiment, while the threat of an impeachment inquiry into the US president was brushed off. With trade talks back on between China and the US the economic outlook has brightened, which may be less positive for gold.

Gold is consolidating its gains. By early September, gold had gained over \$270/oz in three months. It is entirely normal for the price to consolidate its gains and pull back for a while after such a rapid ascent. Short term, the price could see more volatile sideways to lower price action. However, the overall picture for gold remains positive, with the Fed and ECB loosening monetary policy and real interest rates falling.

47 Ag Silver

	Close	Weekly change	High	Date	Low	Date
\$/oz	17.46	-1.83%	18.74	24/09/2019	17.30	27/09/2019
€/oz	15.96	-1.29%	17.05	24/09/2019	15.83	27/09/2019

Silver's underperformance of gold continues. Silver's price fell 3.7% last Wednesday compared to gold's 1.7%. The gold:silver ratio started the week at 82, but that has expanded to 86. While the larger trend remains up, gold and silver prices are in a corrective phase, so silver could see lower prices in the near term before the rally continues.

Photovoltaic (PV) installations to rise in 2019. The IEA forecasts 115 GW of new solar capacity will be installed this year, despite a small decline in China. China shifted its policy from feed-in tariffs to auctions and this led to relatively slow growth of PV installations in the first half of the year. Installations in the US and Europe are expected to grow. However, thriftiness could result in slightly lower silver use this year.

78 Pt Platinum

	Close	Weekly change	High	Date	Low	Date
\$/oz	933	-1.04%	964	24/09/2019	921	27/09/2019
€/oz	852	-0.47%	876	24/09/2019	843	27/09/2019

Platinum supply cut. Following the acquisition of Lonmin by Sibanye-Stillwater, the company has announced plans to optimise the operations at its newly acquired Marikana mine and enter a formal consultation with stakeholders. The company intends to shut some loss-making shafts and open-pit operations, but this will be less than Lonmin announced in 2017. The closures will result in over 5,000 job losses. This could complicate the ongoing wage negotiations with the unions, even though the job cuts should have been anticipated. Overall, an estimated 60 koz of platinum supply will be closed.

are reducing output, others are ramping up production. Sibanye-Stillwater's South African mines will still produce over 25% of total South African platinum supply.

South African platinum production is projected to be moderately lower next year. Although some operations

Platinum jewellery gains support in China. It has been a difficult period for platinum jewellery as demand in China has been almost cut in half since its peak of 2 moz in 2013. However, leading retailers are launching new platinum collections. Platinum Guild International (PGI) and Chow Tai Fook, one China's largest jewellery retailers, have collaborated on a new jewellery collection exclusively using platinum. PGI has entered a similar collaboration with Lao Feng Xiang for a platinum collection.



PRECIOUS METALS REVIEW

⁴⁶ Pd **Palladium**

	Close	Weekly change	High	Date	Low	Date
\$/oz	1,685	2.36%	1,695	27/09/2019	1,634	25/09/2019
€/oz	1,538	2.87%	1,547	27/09/2019	1,489	25/09/2019

The high palladium price is incentivising new production.

Nornickel is expanding its production over the next five years to grow palladium output by 25%. Details of the Definitive Feasibility Study for the Waterberg project in South Africa have been released.

The palladium-rich Waterberg project could cost \$1.1 billion

to build and operate. The project is on the Northern Limb of the South African platinum deposits. This is a remote region and requires a lot of infrastructure to be built. The high current palladium price is making this project look viable. However, using conservative financial assumptions, the post-tax NPV is \$333 million

and the IRR is 13.3% which is not a great return on \$1.1 billion of CAPEX.

Uniquely for South Africa the project's ore reserves split by metal content (4E) is 63% palladium, 29% platinum, 1.5% rhodium and 6.5% gold. Steady-state production of 270 koz p.a. of palladium is scheduled for 2027 and the project has a 45-year mine life. First production would be in late 2023 at the earliest which does not help the current situation of a palladium market in deficit. Large remote projects are also difficult to deliver on time and on budget.

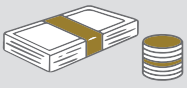
⁴⁵ Rh ⁴⁴ Ru ⁷⁷ Ir **Rhodium, Ruthenium, Iridium**

	Rhodium	Ruthenium	Iridium
Reporting week	\$5,350/oz	\$250/oz	\$1,490/oz
Previous week	\$5,450/oz	\$250/oz	\$1,480/oz

Electrochemical demand for iridium and ruthenium is growing. For iridium, electrochemical demand is 25% of total demand, whereas for ruthenium it is around 16%. Industrie De Nora has opened a new plant in Ohio, US, for the production of electrodes which use a mixed metal oxide catalytic coating, typically based around combinations of iridium and ruthenium. The electrodes are used across a variety of industries including swimming pool chlorination, ship ballast water treatment and marine sewage treatment.

The Waterberg project's ore reserves have a low rhodium content, so while the mine's production would make a large contribution to easing the palladium market deficit, it would make much less of an impact on the rhodium market.

The rhodium price dipped by \$100/oz last week, ruthenium was unchanged, but the iridium price moved up \$10/oz.

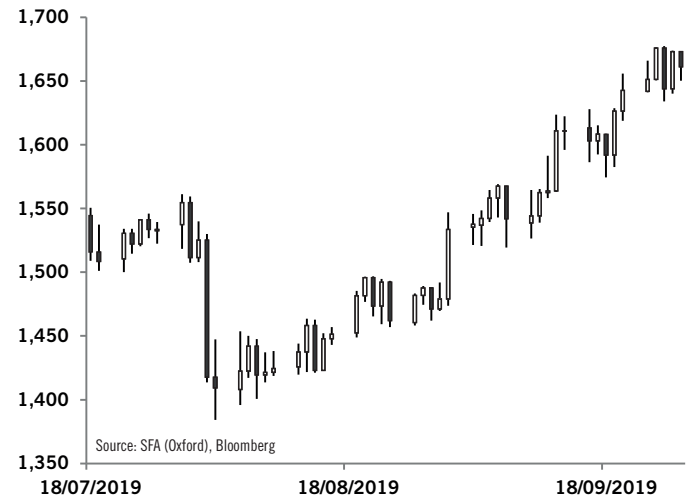


TRENDS AND INVESTMENTS

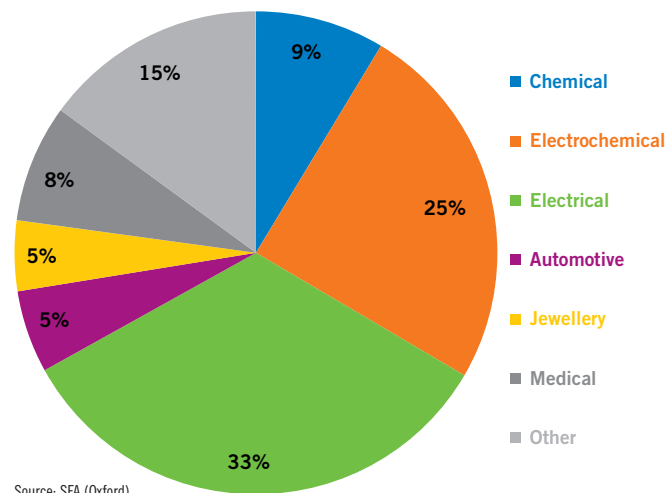
US dollar index



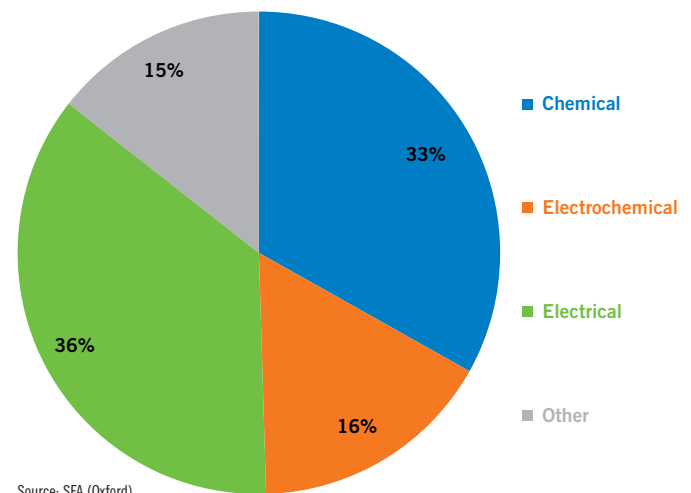
Palladium price



Iridium demand split



Ruthenium demand split



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