



MARKET SPOTLIGHT

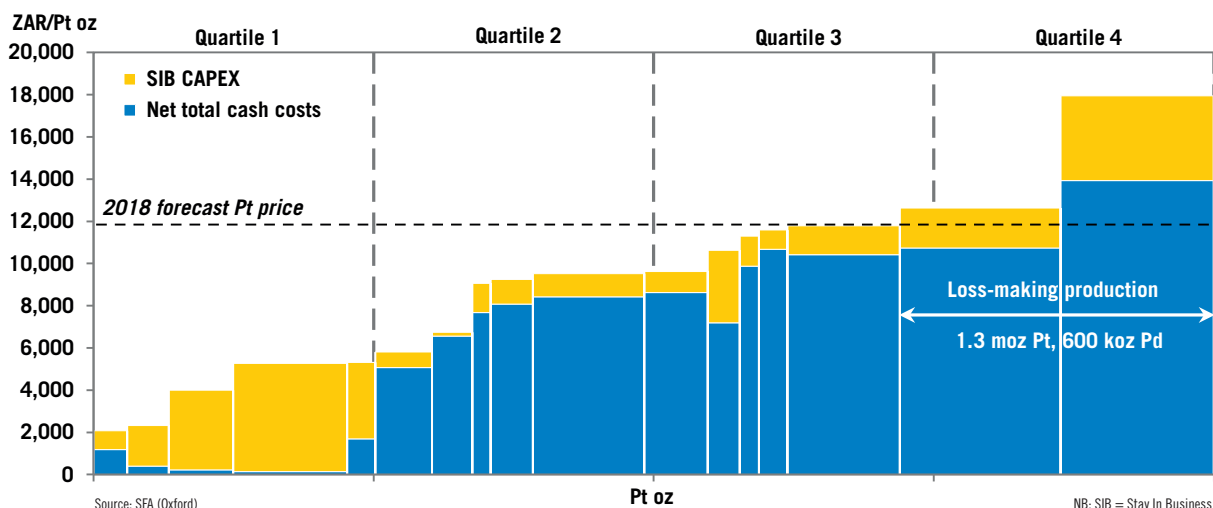
Further palladium price upside ahead?

Last week was **Platinum Week in New York**, but as a gasoline market palladium gets top billing in the US. Unfortunately, 2018 has not been a great year for the palladium price. It started well enough as the price reached a record high of \$1,129/oz in January, but it had fallen 28% by late August and, despite rallying since then, is still down by 12%. **Palladium is mostly an automotive metal and the fundamentals have eased.** US and now Chinese auto sales growth has flattened off and the two countries are engaged in a tit-for-tat trade war which increases the uncertainty around end-use demand. A pause and some profit-taking after rallying strongly for two years are, perhaps, not surprising.

However, while the fundamental outlook may appear less robust than it was, it is not weak. The market is projected to have an 800 koz deficit this year, but the estimated worst case impact of the trade tariffs is a reduction in demand of around 200 koz in the next two years. While significant, this is not enough to move the market into surplus.

Holdings of palladium ETFs have been a source of additional metal, selling 284 koz this year. However, with global ETF holdings down to 945 koz this cannot continue forever. And what happens when investors decide that they want to start buying ETFs again?

Southern Africa PGM industry cost curve, 2018F



The low platinum price is forcing production cuts in South Africa, and palladium will be affected too which will exacerbate the market tightness. Over 600 koz of palladium comes from loss-making mines in South Africa.

Despite a correction at the end of last week, lease rates are still elevated and went up in August even as the palladium price declined, showing the market remains tight. Clearly, there has been a decoupling between what the fundamentals suggest the price should be doing (appreciating) and what the price has actually done (corrected). With global auto sales expected to expand in 2019, **perhaps it is time to reassess the palladium market and reset price expectations higher once again.**



PRECIOUS METALS REVIEW

79 Au Gold

	Close	Weekly change	High	Date	Low	Date
\$/oz	1,197	-0.01%	1,213	13/09/2018	1,188	11/09/2018
€/oz	1,027	-0.73%	1,039	13/09/2018	1,026	14/09/2018

Gold was unchanged at \$1,197/oz as market events of the week had little impact. Traders have acclimatised to the exchanges over trade as neither President Trump's threat of \$267 bn of additional tariffs or news of new talks between the US and China moved the dollar or gold price significantly. Similarly, the almost simultaneous events on Thursday of a miss on US inflation and a mildly hawkish European Central Bank interest rate announcement caused a slight gold rally of +0.6% before being reversed within a few hours. US Treasury

yields have also been rising and are up 18 basis points in the last three weeks to 2.99%, and could draw investment away from gold if they push above 3%. However, global investors are not showing much confidence in a recovery in the gold price as ETF holdings have dropped 342 koz in September and speculators moved to a net short position of -0.7 moz in futures on 4 September from +0.8 moz. More sideways price movement seems likely in the near term.

47 Ag Silver

	Close	Weekly change	High	Date	Low	Date
\$/oz	14.14	-0.55%	14.35	13/09/2018	13.94	11/09/2018
€/oz	12.13	-1.27%	12.51	11/09/2018	11.18	11/09/2018

A silver price below \$14.50/oz has induced some bargain hunting in coins and ETFs, contrary to gold. Silver coin sales at the US Mint reached 1.53 moz in August, a 72% increase on July. Demand has been so strong that the US Mint sold out of the coin earlier this month. In comparison, gold coin sales fell 38% month-on-month to 21.5 koz. Silver ETF holdings have also risen, growing by 5.3 moz to 535 moz since the end of August, just as the gold:silver ratio was making a concerted move above 80. Investors may also have seen speculators move to a sizeable net short position in futures contracts

amounting to 73 moz for the week ending 4 September, having just gone negative for the first time ever during the prior week. The gross short position now stands at a record 643 moz; the previous record of 482 moz occurred in July 2017 at the start of a 15% rally in the price to \$17.99/oz in September 2017. Value hunters are starting to feel that the market has reached the right conditions for investment and are increasing their exposure to physical metal as the chances of a short covering rally have rarely been higher.

78 Pt Platinum

	Close	Weekly change	High	Date	Low	Date
\$/oz	802	2.77%	813	13/09/2018	779	10/09/2018
€/oz	688	1.94%	697	13/09/2018	675	10/09/2018

South African miners are restructuring to achieve sustainable production in this low platinum price environment. Northam Platinum, which produced 290 koz of platinum in FY2018, is aiming to become a 1 moz PGM producer by 2022 and is one of the main sources of expansion in PGM mining. Northam is in the process of ramping up production at its mechanised Booyendal South mine with the aim of moving down the cost curve. In the last financial year it also purchased land adjacent to its Zondereinde mine from Anglo American Platinum and the Eland mining assets from Glencore. However, Northam said the latter will not be fully utilised until

there is a recovery in the platinum market, although the concentrator will be used to reprocess tailings from Eland and Jubilee Metals (PlatCro) within the next year. Impala Platinum, which produced 1.47 moz of platinum in its FY2018, is planning five shaft closures at Impala Rustenburg over the next four years, a consequence of costs of ZAR27,183/oz against a basket price of ZAR25,935/oz. However, for FY2019 Impala has given guidance of 1.5-1.6 moz of platinum output and Northam is also expected to increase production, expanding total South African supply and keeping the market in surplus.



PRECIOUS METALS REVIEW

⁴⁶ Pd **Palladium**

	Close	Weekly change	High	Date	Low	Date
\$/oz	985	-0.39%	993	10/09/2018	969	11/09/2018
€/oz	845	-1.11%	857	10/09/2018	836	11/09/2018

Chinese car sales drop again on poor sentiment. Vehicle sales were down 3.8% year-on-year in August following a 4.0% decline in July, according to the China Association of Automobile Manufacturers (CAAM). The Chinese economy has been cooling and although retail sales increased by 8.8% year-on-year in August, vehicle sales have suffered from a decline in sentiment. The trade war was a factor which was highlighted by the CAAM in its press release. The poor performance of the Chinese stock market will also be contributing to weak sentiment; the Shanghai Composite Index is approaching a bear market having dropped 18% from its peak. As trade tensions are still escalating and the stock market does not appear to have reached a bottom, these factors could continue to

depress Chinese sales in the near future and reduce the growth rate of palladium demand.

Heraeus Precious Metals has opened a new precious metals factory in China. The high-tech and largely mechanised facility will significantly expand Heraeus' capabilities in the refining, recycling and production of precious metals and derivative products to serve the world's largest consumer of PGMs. The factory will expand Heraeus' Chinese recycling capacity from 700 tonnes to 3,000 tonnes per annum and will have the capability to recycle a variety of precious metal products, such as spent chemical catalysts.

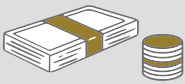
⁴⁵ Rh ⁴⁴ Ru ⁷⁷ Ir **Rhodium, Ruthenium, Iridium**

	Rhodium	Ruthenium	Iridium
Reporting week	\$2,425/oz	\$280/oz	\$1,470/oz
Previous week	\$2,400/oz	\$280/oz	\$1,440/oz

Northam and Impala's results show an overall slight tightening of supply for the small PGMs in their last financial year (July 2017-June 2018). Rhodium production fell 3.5% at Northam to 43.4 koz and Impala's output dropped 2.5% to 198.5 koz. This results in a total contraction of 6.6 koz, small in comparison to the total mine production of 1.1 moz but significant given that additional supply could clearly be accommodated given the rapid price rise. Impala did not directly report production numbers for ruthenium and iridium but growth is likely to have been similar to platinum which

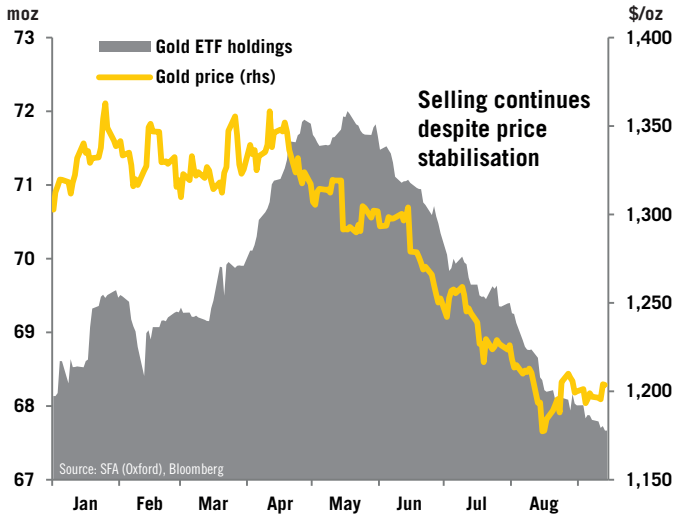
fell 4%. Northam saw increases of 1.8 koz and 13.1 koz for iridium and ruthenium, respectively, to 15.8 koz and 72.1 koz. Supply of ruthenium and iridium is also expected to increase slightly next year, roughly in line with the expansion of platinum production.

Rhodium gained another \$25/oz last week and has now been steadily rising since the beginning of August. Iridium jumped up \$30/oz, the largest weekly increase since May while ruthenium stayed level at \$280/oz.

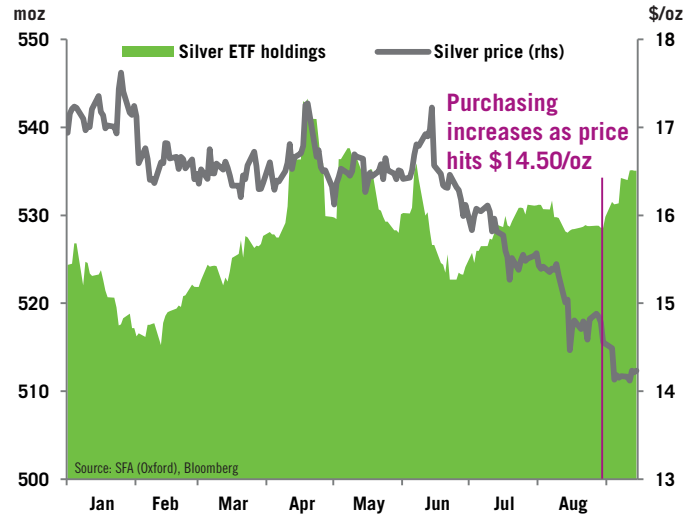


TRENDS AND INVESTMENTS

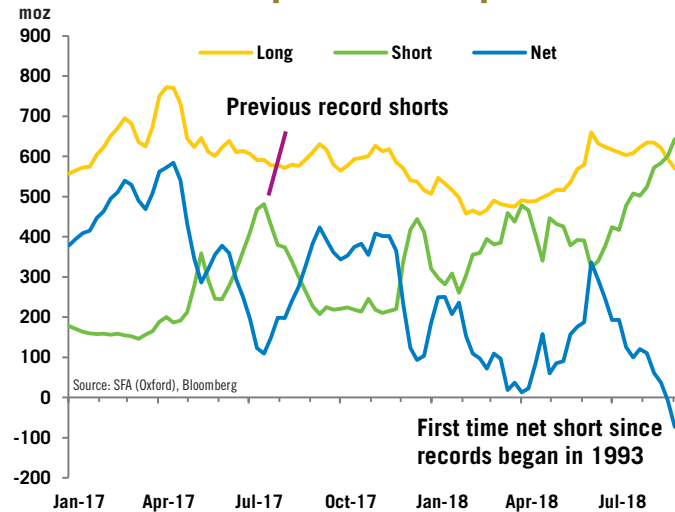
Gold ETFs



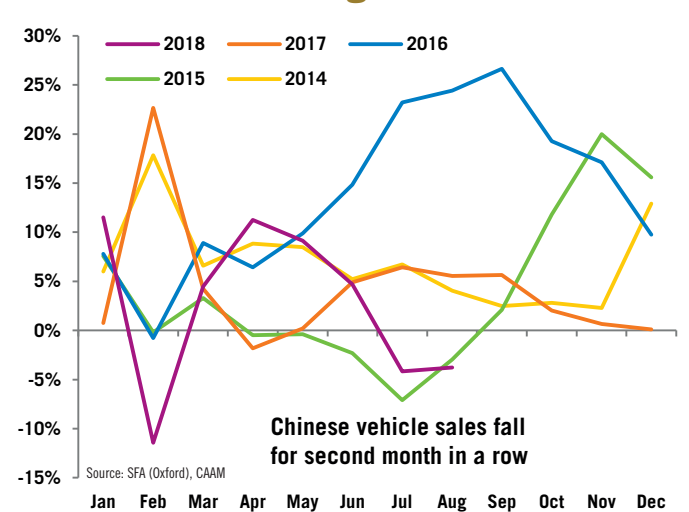
Silver ETFs



Silver futures speculators' position



China vehicle sales growth



Heraeus Precious Metals

Europe, Middle East, Africa & other regions
 Phone: +49 6181 35 2750
 edelmetallhandel@heraeus.com

South East Asia
 Phone: +852 2773 1733
 tradinghk@heraeus.com

www.herae.us/trading-market-report

United States of America
 Phone: +1 212 752 2180
 tradingny@heraeus.com

China
 Phone: +86 21 3357 5658
 tradingsh@heraeus.com

The HERAEUS PRECIOUS APPRAISAL produced in collaboration with:

SFA (Oxford) Ltd
 United Kingdom
 Phone: +44 1865 784374
 www.sfa-oxford.com



The Oxford Science Park, Oxford,
 United Kingdom, OX4 4GA

DISCLAIMER

This document is being supplied to the recipient only, on the basis that the recipient is reasonably believed to be a professional market participant in the precious metals market. It is directed exclusively at entrepreneurs and especially not intended for the use of consumers. The material contained in this document has no regard to the specific investment objectives, financial situation or particular need of any specific recipient or organisation. It is not provided as part of a contractual relationship. It is not and should not be construed as an offer to sell or the solicitation of an offer to purchase or subscribe for any investment or as advice on the merits of making any investment. This report has been compiled using information obtained from sources that Heraeus and SFA (Oxford) Ltd ("SFA") believe to be reliable but which they have not independently verified. Further, the analysis and opinions set out in this document, including any forward-looking statements, constitute a judgment as of the date of the document and are subject to change without notice. There is no assurance that any forward-looking statements will materialize. Therefore,

neither SFA nor Heraeus warrants the accuracy and completeness of the data and analysis contained in this document. Heraeus and SFA assume no liability for any losses or damages of whatsoever kind, resulting from whatever cause, through the use of or reliance on any information contained in this document. However, in so far as a liability claim exists under German law, Heraeus and SFA shall have unlimited liability for willful or grossly negligent breach of duty. Unless expressly permitted by law, no part of this document may be reproduced or distributed in any manner without written permission of Heraeus. Heraeus specifically prohibits the redistribution of this document, via the internet or otherwise, to non-professional or private investors and neither Heraeus nor SFA accepts any liability whatsoever for the actions of third parties in reliance on this document. Prices quoted are interbank (offer) prices for gold, silver, platinum and palladium. Rhodium, ruthenium and iridium quotes reflect the Heraeus offer price at the time of writing.