PLATINUM PERSPECTIVES

Platinum and palladium futures, two different stories

Trevor Raymond
Director of Research
+44 203 696 8772
traymond@platinuminvestment.com

Nicolaj Sebrell, CFA
Manager, Investment Research
+44 203 696 8781
nsebrell@platinuminvestment.com

World Platinum Investment Council
www.platinuminvestment.com
64 St James's Street
London SW1A 1NF

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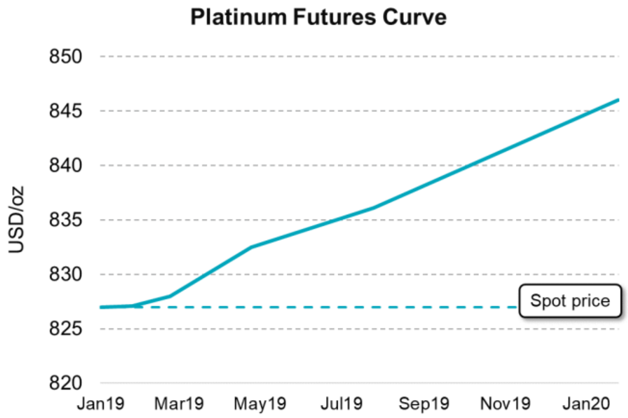
The palladium futures curve indicates a physical market in shortage, which could be positive for platinum demand, in our view. The palladium futures curve indicates a shortage of the metal, to the point where normal arbitrage has been disrupted. This is most likely due to a lack of physical metal available today, to short. The effect is that palladium futures prices look cheap relative to the spot price. With the palladium market expected to be in deficit again in 2019, tightness looks likely to continue. This has pushed palladium's price premium over platinum to over $450/oz, more than four times the premium 6 months ago. As we wrote in our *October Platinum Perspectives*, a widening price differential argues for substitution of palladium by platinum.

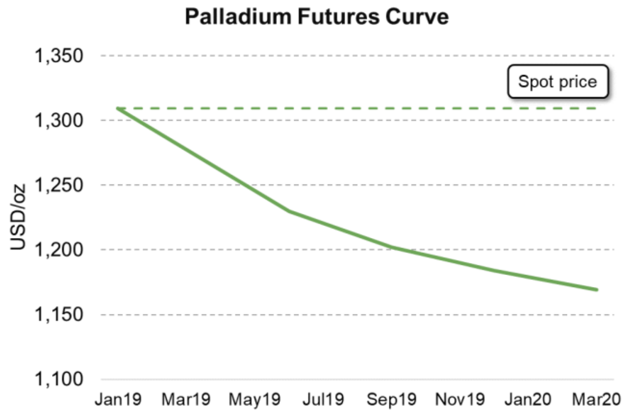
Whilst spot prices are a key investor metric, futures prices can impart valuable market information. Indeed, the palladium futures 90-day average daily traded volume of about 1.2 moz (notional, NYMEX and TOCCOM combined) is estimated to be 4 times or more that of daily traded physical palladium. Forward curves exhibiting unusual patterns such as backwardation (future price < spot price) can indicate a tight market, as is the case today with palladium (graph below right), where there is a shortage of the metal. The platinum futures curve (below left) is in a relatively normal contango position (future price > spot price) where future prices reflect the spot price plus storage and interest costs.

Platinum's futures curve shows a fairly standard contango shape



Source: Bloomberg, WPIC research

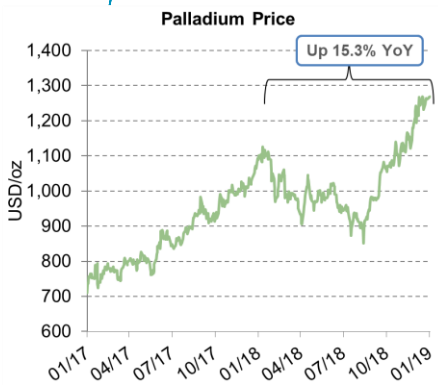
Palladium's futures curve has been in backwardation for over a year, indicating a sustained lack of stocks



Source: Bloomberg, WPIC Research

Sustained backwardation shows arbitrage has been interrupted. In backwardation, arbitrage profits arise from shorting metal in the spot market and buying the equivalent amount in futures contracts, earning a risk-free return when the matched contracts mature. If the metal becomes scarce, however, metal lease rates rise (metal is leased in order to short it), disrupting the arbitrage mechanism. Palladium lease rates are currently over 10% p.a. There may also be upward pressure on lease rates due to palladium being mainly produced as sponge (a metal powder for autocatalysts) rather than ingots used for investment and leasing.

Pd price, market deficit and futures curve all point in the same direction



Palladium's deficit seems likely to continue, sustaining the impetus for platinum substitution. PGM mine production is slow to change with supply growth unlikely to resolve the supply deficit. Demand could dampen due to slowing China car sales, but not enough to reverse the deficit, in our view. The palladium price premium looks likely to remain, despite potential substitution by platinum in gasoline engine auto catalysts.

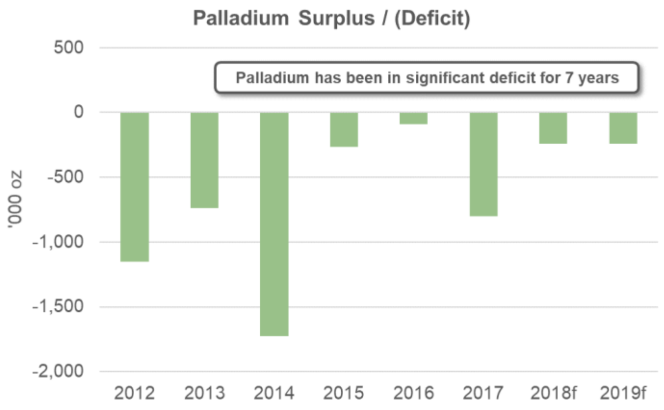
Platinum in six charts – January 2019

World Platinum Investment Council

Platinum's attraction as an investment asset arises from:

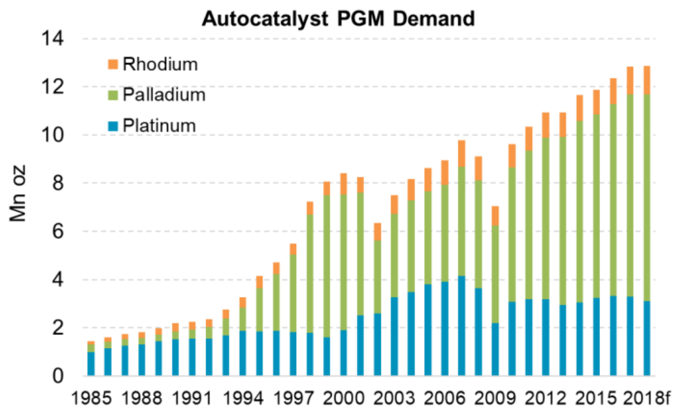
- Supply is relatively constrained with limited investment going into new PGM mines
- Platinum appears undervalued relative to gold and palladium
- Total platinum group metal (PGM) demand continues to grow
- Growing automotive PGM demand argues for potential substitution of palladium by platinum
- Managed money positioning has significant room to improve

Figure 1: Palladium is expected to remain in deficit in 2019, a potential concern to industrial users of the metal



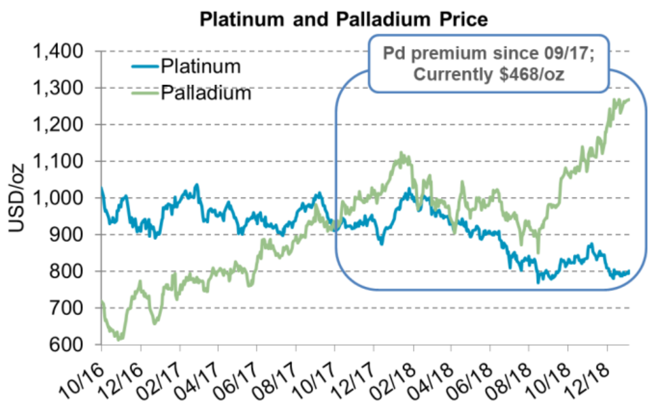
Source: Johnson Matthey, WPIC Research

Figure 2: Rising PGM autocat demand is carried mainly by palladium, presenting a potential availability challenge



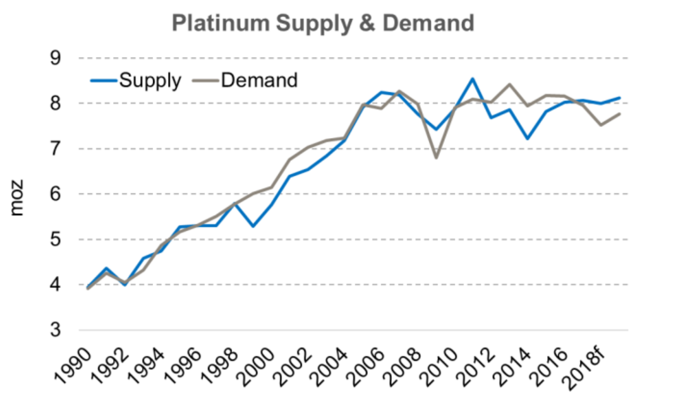
Source: Johnson Matthey, WPIC Research

Figure 3: Palladium's price premium to platinum reflects a tight market and highlights the potential for substitution



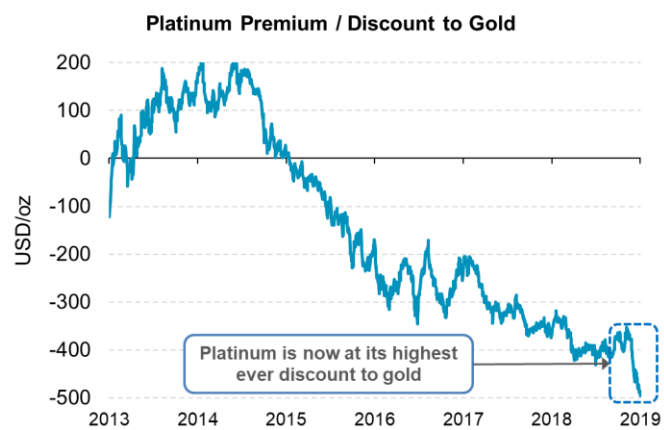
Source: Bloomberg, WPIC Research

Figure 4: Platinum is expected to see a supply surplus on the order of 500 koz this year and next



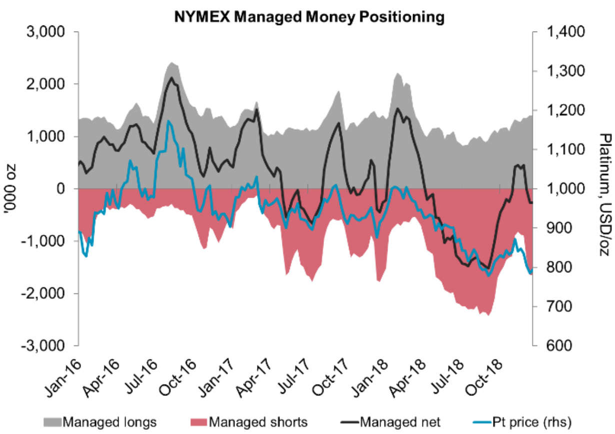
Source: Johnson Matthey, SFA, WPIC Research

Figure 5: Similar to platinum's discount to palladium, the discount to gold is at an all-time high of almost $500/oz



Source: Bloomberg, WPIC Research

Figure 6: NYMEX net positioning is slightly short



Source: Bloomberg, WPIC Research

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