

Steady industrial demand growth underpins platinum

Annual growth in platinum demand from industrial uses has averaged over 3% for the past 20 years and over 7% for the past 5 years. Interestingly industrial demand in 2018 was 35% of *net demand* (total demand net of recycling) of 5.45 moz. Industrial demand in 2018 of 1.91 moz was 26% of total demand of 7.38 moz.

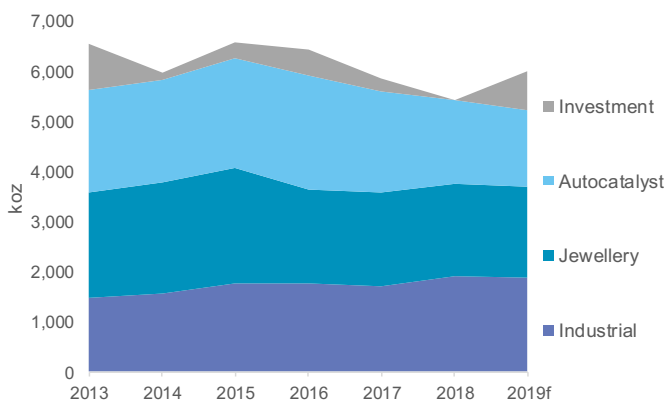
Industrial demand is seldom the focus of market analysis or commentary relative to automotive, jewellery and investment demand. This may be because industrial demand is more diverse and its steady growth typically saw it excluded from discussions linking declines in automotive and jewellery demand to the weak and declining platinum price.

Industrial demand comprises platinum used in the production of chemicals, petroleum, electrical equipment, glass, medicine and medical equipment and many other products. The 'other' category includes stationary and mobile fuel cells; the latter not yet included in automotive demand. Industrial use of platinum is diverse from an application and geographic perspective (see charts below right).

Industrial demand growth is driven by global economic growth and advances in technology but can exhibit short term changes unrelated to macro trends. This is because annual demand arises from two categories: small top-up requirements, as industrial catalysts wear out and is net of closed loop recycling, and much larger amounts of metal when new process plant capacity is built. Industrial demand is usually shown net of recycling. When considering the annual need for platinum ounces from mine supply and above ground stock, industrial demand is particularly significant.

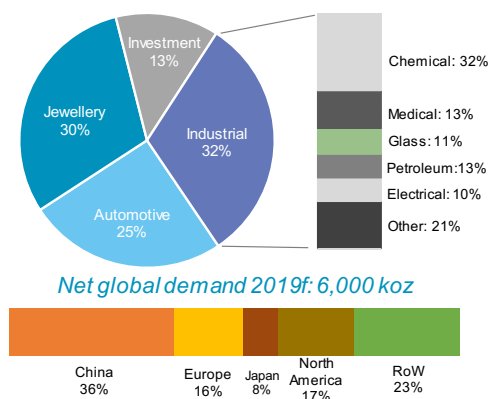
In 2018, industrial demand contributed the largest share of *net demand for platinum* and is forecast to do so again this year (2019 *net demand (moz)*: industrial, 2.0; jewellery 1.82; autocatalyst 1.52). The size and nature of this demand is why **industrial platinum demand is increasingly more important to the investment case for platinum.**

Steady growth in industrial demand has seen it become the largest element of net demand for platinum in 2018



Source: SFA (Oxford), WPIC Research, platinum demand net of recycled platinum

Industrial demand is diverse, in use and geographical spread



Source: SFA (Oxford), Johnson Matthey, WPIC Research

Platinum industrial demand has grown steadily over the last five years (chart above left), partially offsetting easing Chinese jewellery and European autocatalyst demand. The diversity of industrial platinum demand makes it far less vulnerable to any particular change within a type of use or region. **We expect platinum industrial demand to continue growing at or above the rate of global growth.** Arguably it is, and will remain, the “bedrock” of net demand in an innovative and growing world.

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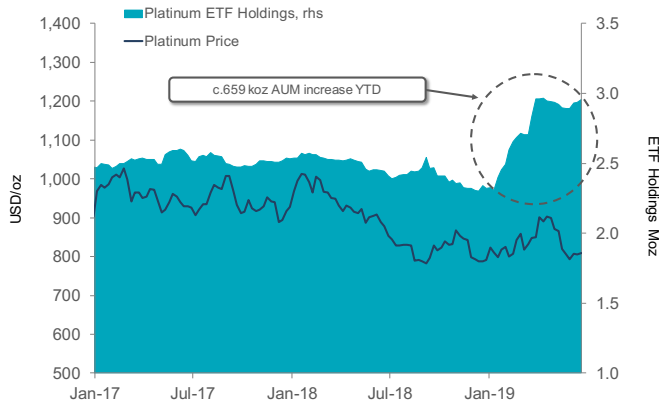
June 2019

Platinum in six charts – June 2019

Platinum's attraction as an investment asset arises from:

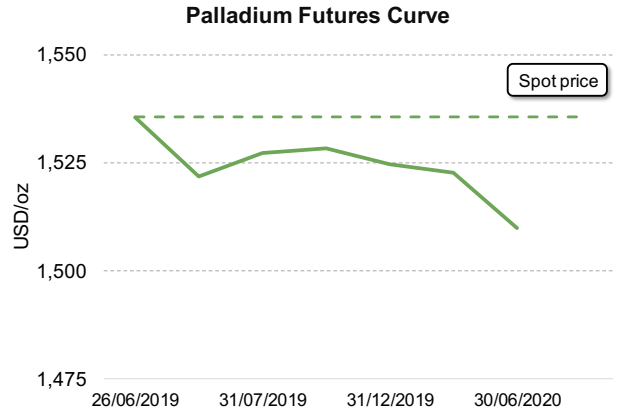
- Supply is relatively constrained with limited investment in new platinum group metal (PGM) mines
- Platinum price is at all-time lows relative to platinum itself, gold and palladium
- Total PGM automotive demand growth should continue due to increasingly restrictive emissions limits
- Market balance mismatches between palladium and platinum argues for substitution
- Investment demand has surged as institutions begin to factor low price and demand growth signals

Figure 1: Platinum's ETF holdings increased by 690 koz in Q1, 2019



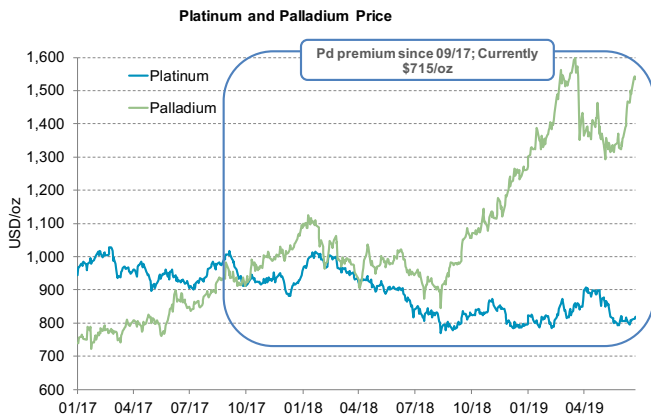
Source: Bloomberg, WPIC Research

Figure 2: Sustained backwardation in the palladium market highlights the availability challenge, supporting switching



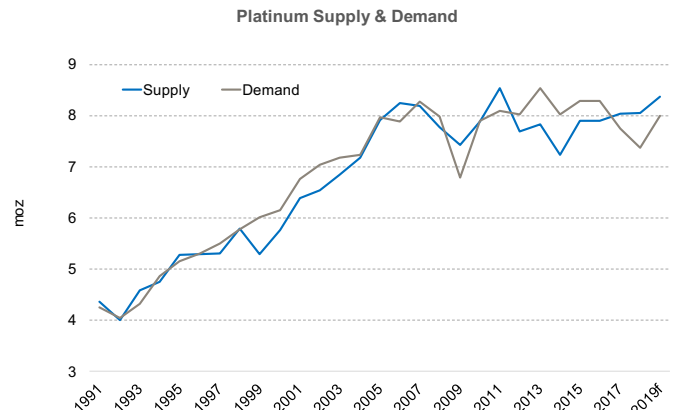
Source: Johnson Matthey, WPIC Research

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



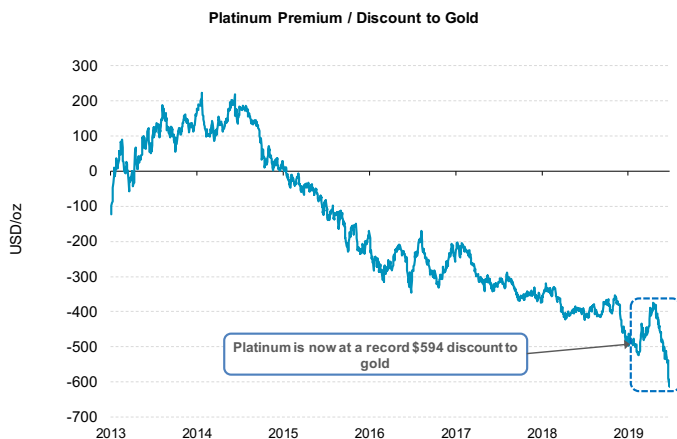
Source: Bloomberg, WPIC Research

Figure 4: The forecast platinum surplus in 2019 has narrowed due to a surge in investment demand (ETFs)



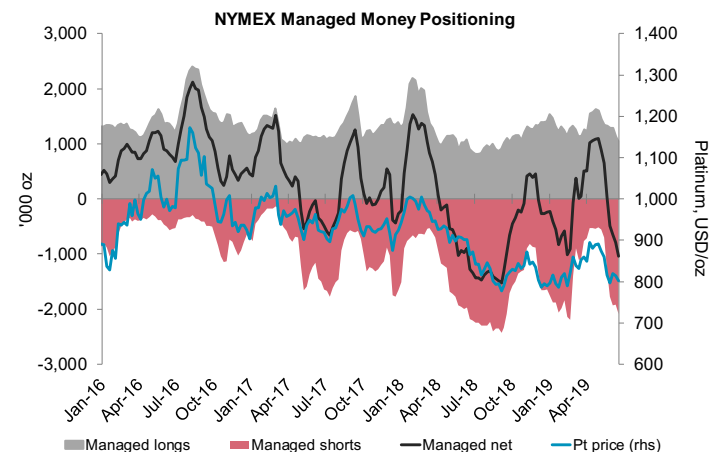
Source: Johnson Matthey, SFA (Oxford), WPIC Research

Figure 5: As with platinum's deep discount to palladium, the discount to gold has widened to a record \$594/oz



Source: Bloomberg, WPIC Research

Figure 6: NYMEX positioning shows rebuilt short- and easing long positioning in 2019 (net 1Moz short)



Source: Bloomberg, WPIC Research

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