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Pandemic Provides Catalyst for Higher Platinum Prices

Platinum Prices Climb Higher as Demand Outstrips Supply

The global COVID-19 pandemic impacted the platinum market's supply and demand dynamics, with supply affected significantly. While demand for the precious metal fell approximately 7% in 2020, supply declined about 20%. Amid this backdrop, platinum supply ran at a deficit of about 1 million ounces (Moz) in a market that typically consumes approximately 8 Moz annually (according to the World Platinum Investment Council). Tighter supply forces pushed platinum prices to break out from a multi-year weak trend. 2020 was a year of strong price moves for platinum, and from the COVID-induced lows in March 2020, platinum prices have climbed more than 90% (for the period 3/20/2020 to 3/26/2021).

We believe that this pricing support will continue in the months ahead. Here, we examine how the platinum market was affected by COVID-19 and what we expect in the coming months.

Figure 1. Platinum Rises as COVID-19 Impacts Supply

Platinum has risen more than 90% since its low on March 20, 2020, through March 26, 2021. (Palladium has yet to regain its February 2020 high.)



Source: Bloomberg. Data for the period 1/01/2019 to 3/26/2021. Platinum is measured by Bloomberg XPT Curncy, Platinum U.S. Dollar Spot. Palladium is measured by Bloomberg XPD Curncy, Palladium U.S. Dollar Spot.

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Platinum Demand: Industrial Recovered, Automotive Steady, Investment Up

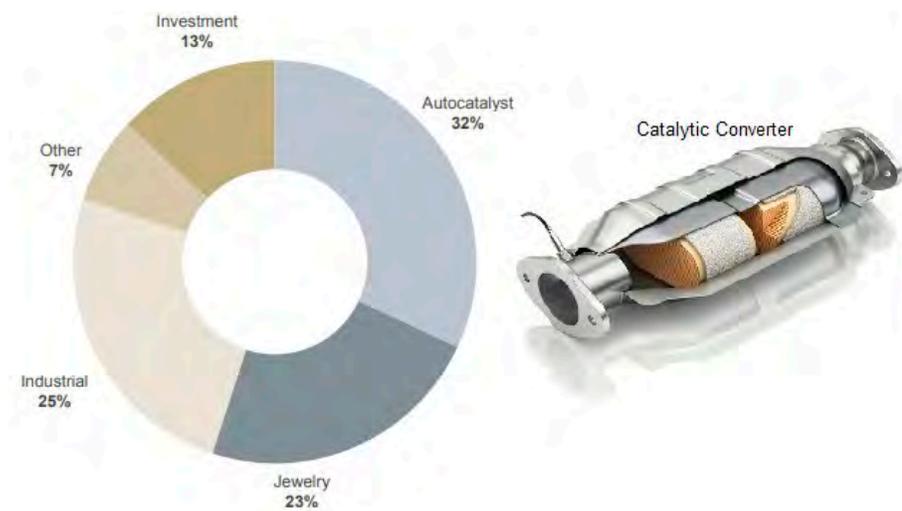
Platinum has multiple end uses, as shown in Figure 2. About 25% of annual platinum consumption comes from the industrial segment, including glassmaking and chemical production (excluding automotive production). Demand in this segment is relatively straightforward, aligning with broader trends in manufacturing. In recent months, the resurgence of manufacturing activity as the COVID-19 pandemic gets under control – first in China, but then across other regions – has boosted industrial demand for platinum back to pre-pandemic levels.¹

Auto production is the largest source of platinum demand, but it is a more complicated story. Global auto sales contracted about 30% in the first half of 2020 but recovered substantially in the second half. Ultimately, sales were down about 15% in 2020 compared to 2019. The recovery momentum is expected to continue into 2021, with sales growth of about 9% projected for the year.²

“Named for the Spanish word *platina*, meaning *little silver*, platinum is the rarest and heaviest of the precious metals.”

Figure 2. The Automotive Industry is the Largest Pt Consumer: Catalytic Converters

The primary driver of demand for Platinum (Pt) and Palladium (Pd) is the automotive industry. Both metals are critical elements in the manufacturing of catalytic converters, which help reduce toxic emissions from vehicle exhaust. Rising car production (especially in emerging economies) and tightening emissions standards worldwide has fueled steady growth in the use of catalytic converters.



Source: PGM Market Report February 2021.

Automotive Demand for Platinum is on the Rise

Within auto production, the powertrain mix (i.e., share trends of different engine types) will continue to have a major impact on platinum demand. Battery electric vehicles (BEV), which are quickly expanding market share³ in developed countries and China, do not require any platinum or other platinum group metals (PGMs), including palladium. However, PGMs play a critical role in the catalytic converters used in internal combustion engines (ICE). A diesel engine typically requires 5-10 grams of PGMs,⁴ with the majority being platinum. A gasoline engine uses 2-7 grams of PGMs, relying more on palladium. This means that within the ICE segment, diesel engines drive more demand for platinum. Thanks to increasing environmental restrictions, diesel engines are holding on stubbornly to market share in Europe especially; diesel engines are about 20% more efficient⁵ than comparable gasoline engines. What's more, we see demand for platinum rising in new gasoline engines. After nearly

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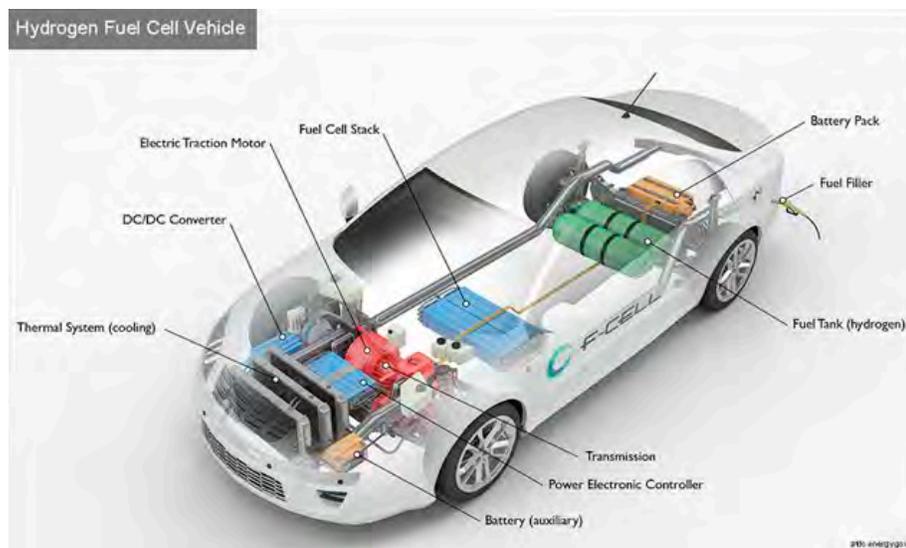
two decades of automakers substituting toward palladium, we are now experiencing a reversal back to platinum. Palladium is extremely expensive, given that prices have soared since early 2019. Palladium has also been increasingly hard to source.

Platinum and Fuel Cell Electric Vehicles

Hydrogen-powered engines, also known as fuel cell electric vehicles, are another driver of the growing demand for platinum. Hydro engines offer clean emissions and rely on stable, accessible, inexpensive fuel, but the infrastructure for fuel stations is less adaptable than more mainstream BEV or hybrid offerings. Certain transport systems and environments – like metropolitan bus fleets and loading docks with vehicle fleets – are excellent candidates for hydro vehicles. Though they account for only a tiny share of global production, the projected compound annual growth rate for the segment is quite high. A hydrogen engine requires about six times more platinum⁶ than an ICE engine.

Looking at the convergence of these short- and long-term trends in the auto segment, we believe platinum demand in autos will remain stable or higher over an intermediate period of one to three years.

Figure 3. Platinum Acts as a Catalyst to Convert Hydrogen into Electricity, Heat and Water



Source: U.S. Department of Energy.

“Store of Value” Demand

The last segment of platinum demand comes from jewelry and financial investments, which we group together as “store of value” demand. Jewelry purchasing plummeted early in the pandemic, but we expect it to rebound fully as the recovery continues – or maybe even to exceed long-term levels, with pent-up purchasing power among wealthier consumers.

Financial investments, which include holdings for bars and coins, ETFs and exchange stocks, are a volatile source of platinum demand but an important one in the current environment. With massive global monetary easing enacted to blunt the pandemic’s economic impact, investor interest in inflation havens has soared. This trend has led gold prices to surge. Platinum is increasingly seen as an alternative for such purposes, though platinum prices have not rallied as sharply as gold.

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Investor purchases have added significant incremental demand to the platinum market, which is sensitive to sudden changes in demand given the market's small size. In 2020 alone, platinum ETFs grew from 3.342 to 3.849 million troy ounces; since the beginning of 2019, platinum ETFs have grown nearly 67%.

Figure 4. Investment Demand for Platinum ETFs Soared in 2020



Source: Bloomberg. Data for the period 1/01/2019 to 3/26/2021. Platinum is measured by Bloomberg XPT Currency, Platinum U.S. Dollar Spot. Platinum ETFs are measured by the Bloomberg ETFPPLTO Index (Platinum Holdings All Known ETFs).

Platinum Supply: Struggles in South Africa Set the Pace

South Africa is the primary location of platinum mining, providing about 73% of the global supply (see Figure 5). Additional supply comes from Russia, Canada, Zimbabwe and the U.S.

South Africa has faced especially difficult conditions during COVID-19, with the rise of a local variant virus that proved to be more contagious than the initial coronavirus and resistant to at least one of the newly approved vaccines. Ongoing lockdowns and staffing shortages pressured mining activity throughout the year. Platinum mining remains a highly manual (and hazardous) enterprise in South Africa. Production for 2020 was down on the order of 25% in the country. However, the outlook for mining production is better for the year ahead and projected to rebound to near 2019 levels. Though the outlook has brightened, the South African platinum supply remains contingent on the path of the pandemic.

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Figure 5. South Africa Mining Activity, Off 25% in 2020, Expected to Rebound in 2021



SUPPLY	2020	2021f	YoY, oz	YoY, %
Refined Production	4,969	5,899	930	19%
South Africa	3,269	4,198	929	28%
Zimbabwe	476	463	-14	-3%
North America	337	374	37	11%
Russia	704	690	-14	-2%
Other	183	174	-9	-5%
Inc (-)/Dec (+) in Producer Inventory	-75	+0	75	N/A
Total Mining Supply	4,894	5,899	1,005	21%
Recycling	1,911	2,033	121	6%
Autocatalyst	1,433	1,517	84	6%
Jewellery	422	456	34	8%
Industrial	56	59	3	5%
Total Supply	6,806	7,932	1,126	17%

Source: Visual Capitalist and WPIC Platinum Quarterly.

Higher Platinum Prices to Persist, in Our View

We are expecting to see continued support for the breakout in platinum prices in the medium term. With a marketplace that ran a supply deficit in 2020, substitution trends away from even-richer-and-scarcer palladium and incremental spikes in demand from financial investors, the market support is there. From both a fundamental supply/demand perspective and a technical trading view that pairs platinum with gold or other comparable store-of-value metals, we believe the higher trend in platinum prices will continue.

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Figure 6. Platinum is the Rarest and Heaviest of the Precious Metals



Source: Visual Capitalist.

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¹ Source: World Platinum Investment Council: Q4 2020 Presentation.

² Source: Businesswire.com. Global Auto Sales Expected to Gain Momentum Next Year; 83.4 Million Light Vehicles to Be Sold In 2021, According to IHS Markit.

³ Source: McKinsey Center for Future Mobility.

⁴ Source: World Platinum Investment Council: Is Automotive Demand for Platinum Increasing or Decreasing?

⁵ Ibid.

⁶ Ibid.

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