

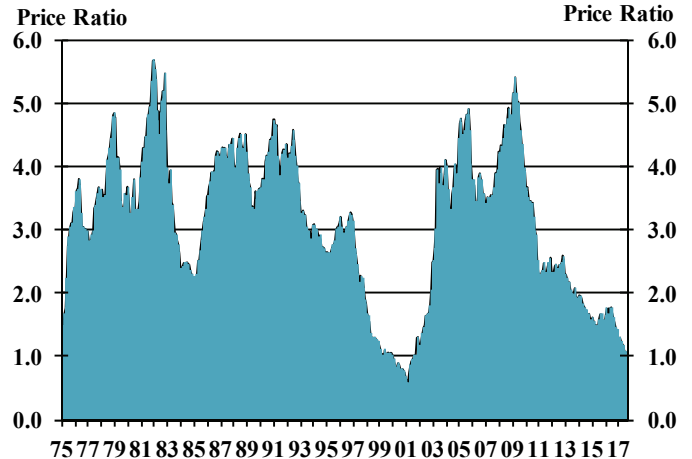
Platinum Near Rock Bottom, Palladium On The Edge Of A Cliff

Many platinum group metals market participants are trying to suss out the implications of the fact that palladium prices now are at a premium to those of platinum, a condition which has only existed once on any sustained basis, and that was back in 2000 – 2001.

The prices of platinum and palladium have been on largely divergent paths since the beginning of 2015, with platinum prices declining and palladium prices on the rise. Palladium prices have been rising from strength to strength for nearly three straight years. Platinum prices, which have been in a declining trend, meanwhile, showed some signs of bottoming out at the beginning of 2016. Platinum prices rose for the better part of 2016, but resumed their decline during the last four months of the year. Platinum has struggled since then to break above its 2016 highs. Platinum prices have been in a declining trend really since the fourth quarter of 2011, with the big decline occurring after the South African platinum mining industry strike settled in the third quarter of 2014. It was the divergence between platinum and palladium prices that became very apparent starting 2015.

The weakness in platinum prices has been driven primarily by softening fabrication demand fundamentals and a lack of commensurate reductions in supply to offset those weaker demand fundamentals. One of the biggest sources of weakness has been the reduction in demand for platinum from the auto sector, the largest end use for platinum. There has been a growing negative sentiment in Europe toward diesel vehicles, which use platinum intensive catalysts. This sentiment has been in the works for several years. Recent emissions scandals coupled with the option for alternative vehicle and emission control technologies have added momentum to this negative sentiment. Outside of Europe, which is the largest diesel passenger market in the world, India was showing some promise, but starting in late 2014 the removal of diesel subsidies quickly killed any hope for an ongoing increase in diesel engine market share. Contrary to market opinions platinum use in auto catalysts has not declined in the years 2015 - 2017, but has been growing albeit at rates of 0.9% - 2.0% per annum.

Platinum - Palladium Price Ratio
Monthly Data, Through September 2017

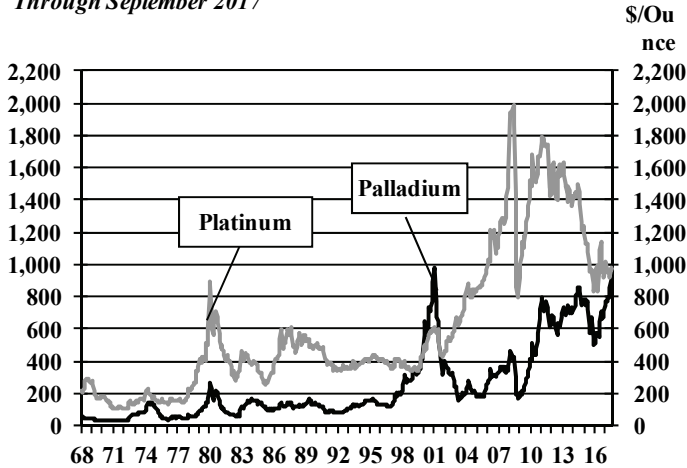


Furthermore, jewelry demand, which is the second largest use of platinum, has not picked up the slack from the auto market. China is the largest consumer of platinum jewelry and a relative slowdown in economic growth in the country over the past few years coupled with a crack-down on graft weighed on platinum jewelry demand in China to an extent. As a consequence, platinum imports into China had declined significantly from a 2013 peak while platinum trading volumes on the Shanghai Gold Exchange are running around one-third of the levels they did during 2013.

One factor that has been helping platinum fabrication demand over the past few years has been an increase in demand for commercial vehicles, which use platinum intensive catalysts due to their diesel engines. The increase in demand from this source has offset some of the weakness in demand from the passenger vehicle market as well as the jewelry market. Demand from the U.S. commercial vehicle market is showing signs of slowing, however. Given that it accounts for nearly 40% of the global market such a slowdown points to further pain for platinum on the demand side in coming years.

While fabrication demand for platinum has been suffering, mine supply has not declined sufficiently to offset the lack of growth in demand. While total platinum supply including secondary recovery from scrap softened in

Monthly Palladium and Platinum Prices
Through September 2017



2016 and is off around 13% from its peak in 2006, the decline has not been sufficient. Perhaps even more important to platinum prices, the weakness in fundamentals has made investors nervous about absorbing the on-going market surpluses, which has further weighed on prices.

There is a common misperception that the platinum market has been in a deficit for many years. In fact, with the exceptions of 2012 and 2014 the platinum market has experienced large surpluses of total supply relative to fabrication demand for most of the time since 2003. As savvy investors became aware of these surpluses they emerged as sellers after 2011, and have been reluctant buyers since then.

With all of this well known in the platinum market, the weakness in platinum fundamentals seems to be for the most part already factored into the metal's price. While there is potential for platinum prices to decline further, the downside for this metal seems limited at this time. The South African platinum mining industry is suffering, meanwhile, but the couple of mine closures have been offset by some mining companies expecting growth in output going forward and an expansion in output outside South Africa. The fate of platinum prices largely rests on the shape of the supply curve for the next five to 10 years. While secondary supply is forecast to continue declining, mine supply is not expected to decline sharply or at least sharply enough over the next few years. Price supporting reductions in supplies appear to lie further in the future.

Palladium prices meanwhile have been going from strength to strength over the past few years. While the

fabrication demand fundamentals for this metal have been more favorable than those for platinum, it would seem that these fundamentals are already priced in around current levels. Some of the recent gains in prices have been driven by chart-based buying, momentum trading, and a tight physical market relative to investment demand. Conditions in the Nymex palladium futures market also have factored into higher prices this year.

Platinum's loss in the auto market, discussed above, has been palladium's gain. That said, China and the United States, two of the largest auto markets in the world and primary users of palladium intensive catalysts, have been experiencing some softness in demand. Furthermore, unlike in the case of platinum, palladium secondary supply is on the rise and palladium mine supply is to a large extent a byproduct of platinum, especially from South Africa. This means that if platinum mine supply is not shrinking in any meaningful way neither is palladium mine supply.

Quite often the prices of these metals run ahead of their fundamentals and that could be the case with palladium. If there is a decline in prices the fall could be sharp because of the nearly unilateral fashion in which this market has performed in recent years. There have been a lot of new investors that have entered this market, attracted by the healthy and sustained rise in prices. Part of this demand is responsible for the tightness and recent backwation seen on the Nymex. Many of these investors are likely to leave the palladium market just as quickly as they got into the market. Furthermore, there is a large volume of metal held by long-term investors who may consider locking in at least some of the gains seen in the present rally, which could further compound any decline in prices. While the medium-term fundamentals for the metal remain healthy the present rise in prices has outpaced palladium supply and demand fundamentals and appears to be more the outcome of speculative buying versus fundamentals based buying.

CPM Group's 2017 Platinum Group Metals Yearbook may be purchased at \$160. Send request to info@cpmgroup.com.