

OUTLOOK

- The platinum market is expected to be in surplus in 2012 but not by a significant amount.
- Supplies of platinum are forecast to increase next year due to rising mine output in South Africa and Zimbabwe.
- Although downside risks remain in the world economy, a rise in automotive demand for platinum is once again anticipated in 2012.
- Even with Russian state stock sales next year, the palladium market is likely to be fundamentally in deficit.
- Our expectations are that autocatalyst and industrial demand for palladium will grow. Investment demand will be positive but jewellery demand is expected to fall.
- Demand for rhodium is set to rise but the market will remain in surplus.

OVERVIEW

At the time of writing, the prognosis for the world economy in 2012 is looking increasingly gloomy. In Europe, problems of sovereign debt in the eurozone periphery continue to be of concern. In North America, low rates of economic growth together with low inflation and stubbornly high unemployment leave little room for optimism in the short term. The Japanese economy, despite recovering well from the March 2011 earthquake, is still faced with the same issues of anaemic growth as before the disaster. China's attempts to engineer a soft landing for its economy appear to have been successful in slowing growth to more sustainable levels, but now risk lowering domestic demand. Prospects for economic growth in 2012 are most promising in the Rest of the World region. However, even in fast-growing countries such as Brazil and India, consumer confidence appears to be faltering. Although comparisons with the beginning of the recession in 2008 may be exaggerated, the next six months are likely to be difficult ones for the world economy as growth slows.

With the high degree of economic uncertainty worldwide at present, we cannot rule out the possibility that negative market sentiment, which so far has mainly impacted prices, could begin to materially affect physical demand for industrial commodities, including pgm. The trigger for this could be a failure of market confidence surrounding eurozone debt, perhaps as a result of disorderly debt restructuring in peripheral economies. Another might be further slowing of growth in key countries such as the USA or China. On the other hand, core European economies such as Germany have to date weathered the economic storm in the eurozone remarkably well and continue to be engines for growth, led mainly by export demand. Although the USA faces economic headwinds, the crisis over raising the debt ceiling in July 2011 has focused attention on staving off another recession. In China, the

government remains committed to delivering sustainable GDP growth. Overall, the world looks set for a period of slower growth in 2012, with the risk of market pessimism turning into a genuine drop in physical demand. Although the dimmer economic outlook implies overall weaker purchasing of pgm, individual demand sectors require closer examination in order to determine their prospects.

PLATINUM

Supplies of platinum are forecast to increase in 2012, as is recovery from open loop recycling. On the demand side, although growth might be tempered by current macroeconomic uncertainty, there are strong demand drivers in the autocatalyst and industrial sectors. Overall, we anticipate that the platinum market will remain in a small surplus next year.

Supplies of platinum from South Africa once again have the potential to rise modestly in 2012 as a result of improved underlying production. Although the industry still faces possible disruption, recent developments give grounds for cautious optimism. The two biggest producers in South Africa recently signed two-year agreements with the National Union of Mineworkers, with headline wage increases of between 8% and 10% per year. These rates are well above CPI inflation but are lower than some of the recent wage settlements at South African producers and may mean there is less potential for disruption due to wage negotiations next year. Costs still remain high, which makes it challenging to invest in future capacity. However, the weakening of the South African rand during September 2011 has given producers a temporary reprieve on costs even though it comes at a time of lower pgm prices. This may potentially allow investment in new capacity if the weaker rand is sustained in the longer term.

Mining operations by Norilsk Nickel in Russia are expected to continue to experiencing falling grades; we anticipate

that refined output could fall in 2012. In North America, we anticipate that supplies will continue to be at stable levels following the return to normal production. In Zimbabwe, we forecast another increase in production despite continuing uncertainty over mine nationalisation. Although interruptions to output due to the political situation cannot be ruled out, we anticipate that 2012 will be a growth year as a result of investment already made by all producers to expand projects.

With an uncertain economic outlook affecting consumer confidence, in the next six months light duty vehicle production in Europe is unlikely to grow as it did in the first half of 2011. Despite this, the global automotive industry remains in good shape and considerably healthier than in 2008, with ample liquidity, lower debts, less spare capacity and less unsold inventory. Europe is already witnessing the beginning of a technology shift aimed at reducing fleet-average CO₂ emissions, which will be positive for platinum demand. In order to improve fuel economy, and lower CO₂ output, one manufacturer is due to introduce lean burn gasoline vehicles with platinum-containing lean NOx traps (LNT) in greater numbers in 2012. In North America, expected growth in total production, particularly of light duty diesel vehicles, will account for some additional platinum demand next year as will the return to full production levels at Japanese transplants in North America. In Japan, a ramp-up to full production is scheduled for the end of 2011, and there is scope for domestic sales of light duty vehicles to increase strongly in 2012 if consumer confidence returns. We forecast that demand for platinum in heavy duty diesel emissions control systems will continue to grow in Europe and North America as truck fleets are replaced following the recession in 2008 and 2009. In Europe we anticipate rising platinum demand due to a move to pgm-containing systems, similar to those currently used in North America, in order to meet Euro VI legislation which begins to come into force in 2013.

Slower growth worldwide, coupled with the expiry of economic stimulus measures in many countries, will impact consumption, thus generally lowering purchases of platinum in industrial applications. However, there are some grounds for optimism since commitments to build or expand capacity utilising pgm technology have already been made. Although the global glass fibre manufacturing industry will remain in overcapacity in 2012, with little demand for platinum melting tanks, we anticipate that a number of LCD glass manufacturing lines will open in Asia, stimulating purchases of platinum. In the electrical sector, current projections are for growth in consumer electronics sales next year and we therefore

anticipate rising demand for platinum in hard disks.

The prospects for platinum jewellery demand in China remain robust, as platinum maintains its solid position in the bridal and self-purchase sector. However, the rising gold price and gold's consequent popularity with consumers has had some impact on platinum at retail level in 2011 and may do so again in 2012. If the current gold price premium is maintained, however, it may spur further increases in platinum demand by manufacturers and retailers as platinum is seen as something of a bargain. Manufacturers are currently stocking platinum in anticipation of forthcoming demand and we remain confident in the future of this market.

We expect physical investment demand for platinum to be positive in 2012, but the degree of acquisition in this sector is, as always, likely to be strongly dependent on price volatility. We judge that there is a core of long term investors in the platinum ETF market which is largely immune to short term price movements and that the sell-off of ETF positions in September 2011, like the sell-offs in March and May 2011, was largely of metal held by more speculative investors. Excepting a major crisis of investor confidence across industrial commodities, and supported by continuing low interest rates, we anticipate further physical investment in 2012, although at a lower level than in 2011.

Recycling of platinum in autocatalysts should increase once again in 2012 as more highly-loaded catalysts are scrapped. Overall, with a modest rise in supplies, higher recycling, and, despite the downside risks, healthy industrial and automotive demand, the platinum market should be in surplus again in 2012 but not by a significant amount.

PALLADIUM

We predict tighter palladium supplies overall in 2012, due to lower sales of Russian state stocks partly balanced by slightly higher output from South Africa. Overall demand should be healthy, but with the possibility that slower consumer spending could have knock-on effects on the autocatalyst and industrial markets. Even with some sales of Russian state stocks next year, we expect the palladium market to move into fundamental deficit.

South African supplies of palladium are expected to rise in 2012 in line with higher levels of mined output. Russian palladium supplies from primary mining are set to soften by a modest amount due to falling grades. However, we anticipate that some residual sales from Russian state stocks are likely, but at much reduced levels compared with the last few years.

North American supplies are forecast to fall as production returns to more normal levels. In Zimbabwe, palladium production is expected to grow in line with mine expansion.

In the automotive sector in Europe, vehicle production could fall due to slower economic growth coupled with weaker consumer spending. In North America, although we cannot rule out a drop in consumer spending, we anticipate higher vehicle production, which will positively impact palladium demand. We also anticipate further substitution of platinum with palladium in diesel autocatalyst formulations. In Japan, higher vehicle production as full recovery from the March 2011 disaster takes place will raise palladium demand in gasoline vehicles. China will continue to be a growth area as more gasoline autocatalysts are manufactured. In the Rest of the World region, growth in vehicle production in Brazil, India, and South Korea should benefit palladium demand, although if consumer credit becomes more restricted in these markets as a way to control inflation, there may be some negative impact on domestic sales. Overall, we anticipate that the increase in palladium demand in the automotive sector should be at least as strong as it was in 2011.

Expansion of production capacity is expected to raise demand for palladium process catalysts in China. However, we forecast overall chemical demand for palladium to remain flat due to a lack of any major capacity expansions outside China. Provided sales of electronic equipment do not drop dramatically, we expect that demand for durable passive electronic components will help drive purchases of palladium.

The prospects for palladium demand in the jewellery sector are expected to be once again limited by a lack of effective marketing and consumer awareness in China, the biggest market. Following a year in which investor sentiment has drifted away from palladium, we anticipate that 2012 will be more positive for physical palladium ETF demand.

Recovery of palladium from open loop recycling will grow, driven by higher palladium loadings on scrapped vehicle autocatalysts, together with palladium jewellery being scrapped by retailers and manufacturers in China.

On balance, we currently expect autocatalyst and industrial demand for palladium to be strong next year, although if the negative economic outlook spills over into a fall in consumer spending, the obvious reverberations through the supply chain would have some negative impact. Otherwise, even allowing for several hundred thousand ounces of supplies from Russian state stocks, and robust worldwide primary production, the palladium market is likely to be fundamentally in deficit next year. With the investment and jewellery sectors remaining

positive but representing a much smaller share of palladium demand than pre-2011, the palladium market will be more industrially-driven in 2012 than it has been for many years.

OTHER PGM

The rhodium market is set to tighten somewhat in 2012 but remain in surplus as higher industrial demand offsets an increase in supplies and growth in recycling.

Supplies of rhodium are expected to increase in 2012 due to higher output in South Africa and full production levels being reached at operations in Zimbabwe. Gross demand for rhodium in autocatalysts is forecast to rise in 2012 as Japanese manufacturers, the heaviest users of rhodium in gasoline aftertreatment, will have returned to full production levels. Assuming higher vehicle output in China and North America, we also anticipate some growth there.

Provided that existing capacity is maintained, we anticipate that purchasing of rhodium for chemical applications will rise slightly in all regions driven by demand for top-up catalyst at oxo-alcohol manufacturing plants. In the glass manufacturing sector, we anticipate a softening of rhodium purchasing in line with less expansion in global melting capacities. Recycling of rhodium is set to increase by 8% as greater numbers of rhodium-rich end-of-life vehicle catalysts are scrapped.

Ruthenium demand is forecast to strengthen in 2012 as purchasing by the electrical sector increases and demand from the electrochemical sector continues at a high level.

In line with growth in purchasing in the electrical sector, ruthenium demand is predicted to rise in 2012, following a year of softer demand. Purchasing of ruthenium in the electrochemical sector is expected to remain robust as lower demand for new membrane cells in the Chinese chlor-alkali industry is offset by higher purchasing of ruthenium for that application in North America and also in the growing area of swimming pool purification.

It is anticipated that iridium demand will dampen next year mainly as a result of lower purchasing of crucibles in the manufacture of single crystal sapphire for LEDs.

With elevated prices, we anticipate lower iridium crucible purchases as manufacturers switch to alternative technologies for producing sapphire. High levels of inventory building by manufacturers in 2010 and 2011 will also affect demand. A promising growth area next year is the use of iridium in organic light emitting diodes (OLEDs), a technology finding widespread use in portable displays. Purchasing of iridium for use in spark plugs is once again expected to remain robust.