

# OUTLOOK

- **Platinum supply is likely to be under pressure from weak margins and unstable labour relations in South Africa.**
- **Demand for platinum in autocatalysts is expected to be steady and jewellery demand may decline to an extent, but a rebound in industrial demand will be led by higher purchases of platinum by the glass industry.**
- **If investment demand continues to be positive, the platinum market may be slightly in deficit in 2013.**
- **Palladium supply is likely to decline in 2013 as Russian stock sales dwindle and primary mine output is stable.**
- **Autocatalyst demand will grow due to rising vehicle output while palladium industrial and jewellery demand are expected to diminish slightly. The palladium market is likely to be undersupplied again this year.**
- **Rhodium demand will increase but we forecast that rising supplies and recycling will keep the market in surplus.**

## PLATINUM

**We expect primary supply of platinum in 2013 to be a little higher than last year, with broadly the same level of sales from South Africa as in 2012 and slightly higher shipments from other regions. Gross demand for autocatalysts is unlikely to grow and jewellery demand may well decline slightly. Demand from industry, notably the glass sector, is expected to rebound from the low 2012 level, while secondary recovery of platinum from autocatalyst scrap should grow. This will leave auto, industrial and jewellery demand more or less matched by supply. If investment demand repeats last year's pattern of net growth, then the market for platinum may be in a slight deficit in 2013.**

South African supply of platinum fell to its lowest since 2001 last year as a result of strikes, safety stoppages and mine closures, but there are no definite prospects of significant recovery in output in 2013.

Many of the mines remain under serious cost pressure. Double digit inflation in labour and energy costs has become a norm for South African platinum mines and as rand pgm prices have not been rising enough to compensate, a large part of the industry has lacked the revenue to sustain production in the longer term. Some of the smaller platinum mining operations were closed last year; in 2013 a substantial amount of capacity is due to be shut down.

Anglo Platinum announced in January 2013 a plan to close four shafts at its Rustenburg operations and lay off 14,000 employees, reducing production by 370,000 oz a year. The company expects to supply a similar amount of platinum as in 2012, with the output lost from facilities due to close being offset by recovery of production at mines affected by last year's nine-week strike.

This assumes that the planned closures will go ahead. However, it is difficult, from a social perspective, to make

drastic cuts to employment in South Africa even if there are convincing economic arguments for doing so. This has been demonstrated by the strength of the reaction of government and unions to Anglo Platinum's announcement, prompting the company to delay execution of its plans while consultations on the proposed dismissals take place.

Further industrial action in 2013 cannot be ruled out; there has already been a strike this year at Northam Platinum. The disputes at Impala, Lonmin and Angloplats in 2012 were initiated by rock drill operators (RDOs) withdrawing their labour, paralysing all production from underground. Many of the strikers belonged to the Association of Mineworkers and Construction Union (AMCU), which has displaced the National Union of Miners (NUM) as the union with the largest worker representation on the major platinum mines.

As mid-year wage negotiations in the platinum industry loom, further strikes in support of pay rises are possible, especially given the rivalry between the two unions. Even if the bargaining process is uneventful it is likely to result in increased cost pressure on the mines, putting operations further in jeopardy.

As long as there are no major interruptions to output and that Anglo Platinum reduces production according to its plans, South African production in 2013 may not be very different from last year – although sales into the market might be a little higher than production, if South African producers have refined inventory available to supplement output and choose to release it.

Changes in supply from other regions will be slight. Russian output of platinum is likely to decline slightly due to lower pgm grades in the ores being mined at Norilsk Nickel. There should be an increase in output from Zimbabwe where, despite a challenging political environment, there is no sign of any intent by the mines' South African parent companies to alter their production plans in this relatively low-cost mining area.

*Investment demand may decide the platinum market balance in 2013.*

The platinum market may not need additional supply this year. Gross demand for platinum in autocatalysts does not appear likely to grow in 2013. Purchases of platinum by the auto industry mainly stem from its use in emissions control for diesel engines, with Europe dominating demand because of the high number of diesel light duty vehicles built in the region. In 2013, light duty vehicle production in Europe is forecast to fall by around 5% on the already depressed 2012 level. With a continued squeeze on European household budgets, there may be a further decline in sales of diesel vehicles as consumers favour cheaper gasoline cars.

Growing sales of diesel cars and SUVs in India, supported by a government subsidy on diesel fuel, have become important factors in platinum autocatalyst demand, but slowing vehicle sales in the first quarter of 2013 and a planned reduction in the subsidy threaten to choke short term demand growth. Increased output of diesels in some of the other markets where emissions controls apply is unlikely to outweigh the impact on demand for platinum from declining European production. Meanwhile, no new light duty diesel emissions legislation which would promote the use of platinum on catalysts is due to be applied this year in any of the major diesel auto markets.

Some growth in demand for platinum in the auto industry is likely in the heavy duty and non-road sub-sectors. The former should benefit a little from the introduction of Euro VI legislation for heavy duty trucks in Europe in January 2013 and from tighter legislation for heavy duty vehicles in China which, after two postponements, is now expected in mid-2013. The use of platinum to control emissions from non-road diesel vehicles will also rise as increasing numbers of engines meeting more stringent legislation are produced.

Although gross autocatalyst demand may be stable in 2013, on a net basis it will probably decline. Recycling of platinum from end-of-life catalysts can be expected to increase due to natural growth in the amount of scrap collected and as refiners receive material withheld from the market last year.

We expect industrial demand for platinum to recover in 2013 largely because of a change in levels of purchasing by the glass industry, which after drawing on inventories of metal in 2012 will have less platinum on hand to feed new plant installations. This might be the last year of strong expansion in display glass capacity for a while. Companies in China will soon achieve their ambition to amass enough production to supply their domestic market, leaving the rest of the world with more capacity than can be immediately filled. New chemical plants in Asia and the Middle East and a recovery in output of hard disks will require more platinum this year too.



In China and India, currently the only growth sectors for platinum jewellery, demand for platinum is far from reaching a natural ceiling. Driven by these two markets, we expect gross global demand for platinum in jewellery fabrication to remain firm in 2013, while perhaps not attaining the level of 2012, which was the second highest on record. Most major manufacturers in China reported that demand for platinum jewellery was strong in the first nine months of 2012 but not as good in the next two quarters, most likely a result of firmer platinum prices and high inventories of finished jewellery.

Retail sales were reported to have been weaker in the first three months of 2013, partly because Chinese New Year and Valentine's Day, both good selling occasions for jewellery in China, were coincident this year. Nonetheless, major jewellery brands in Hong Kong are planning to further expand their retail distribution network into lower-tier regional cities in China during 2013 and this is likely to stimulate production of platinum jewellery for building the necessary retail stocks.

Demand in India, although at a far lower level than in China, is growing due to enthusiasm for platinum from retailers and their customers, evidenced by platinum being more and more widely distributed in jewellery stores across the country. Platinum is gaining acceptance as an alternative to gold for jewellery to celebrate relationships, as men's jewellery, or to mark auspicious occasions.

Investment demand might prove to be the balancing factor in the platinum market this year. Assuming that investors in platinum exchange traded funds (ETFs) behave in 2013 as they did in 2012, the direction taken by the platinum price will tend to determine net investment in ETFs, with buying into price increases stronger than selling during price falls.

If our supply and demand assumptions are correct, little price stimulus is likely from fundamental factors. Instead look to broader investor and speculator sentiment, and how this responds to movements in the gold price, economic policy change and the challenging operating environment in South Africa, to produce volatility in platinum in 2013.

## PALLADIUM

**Of all the platinum group metals palladium has the strongest fundamental outlook, as a result of declining supply and burgeoning autocatalyst demand.**

The dynamics of the palladium market are becoming quite distinctive. Supplies of palladium are likely to fall again in 2013 as Russian stock sales diminish further and mine output from Russia and South Africa struggles to grow. Although non-automotive industrial demand may only be stable at best, autocatalyst demand will continue to increase, probably to a greater extent in absolute terms than growth in recycling from autocatalyst, electrical and jewellery scrap.

This is a recipe for an undersupplied market, an outlook which should maintain positive interest in palladium by subscribers to ETFs and other investment vehicles, with potential upward pressure on the palladium price as a result. The major risk to this prognosis is the price reaching a level high enough to initiate release of some of the approximately nine million ounces of surplus palladium which have been absorbed by the market since 2001.

These surpluses were largely created by the sale of the Russian government palladium stockpile. This process of disposal has taken many years to accomplish but appears now to be almost complete. Information about the size of Russia's state reserves is scant, and is officially still a state secret. However, what has been gleaned in the last few years supports a growing consensus (which we share) that sales from stocks in 2013 will be less than half of the 2012 level, which was itself sharply down on earlier years.

If this outlook is correct, the overall supply of primary palladium in 2013 will probably fall, as it is unlikely that new production this year will be able to compensate for the predicted drop in sales of palladium from Russian state inventories. We expect South African supply to be stable, barring more episodes of prolonged disruption to output through wage disputes or any unforeseeable events. Production from Zimbabwe is scheduled to rise, with government pressure on platinum mines in Zimbabwe to transfer share of ownership to local stakeholders being

unlikely to affect operations in the short term, in our view.

However, a good portion of this increase in sales to the market from southern Africa could be offset by lower production of palladium in Russia, where declining pgm grades in the orebodies being mined at Norilsk Nickel will have an impact on palladium output. In total, the net increase in newly-mined supply in 2013 may be quite small. A more significant contribution to overall supply of palladium this year is likely to come from increased volumes of scrap from autocatalysts, as additional numbers of vehicles are dismantled and as collectors release material hoarded during periods of low prices in 2012.

Demand for palladium in autocatalysts grew by 7.5% in 2012. There is no reason not to expect another increase in overall demand for palladium in 2013, although not at such a high rate of growth as last year. The regional distribution of demand will vary. It is likely to be slightly down in Europe and Japan and flat in North America, but we expect demand to grow in several key developing auto markets.

The continued weakness of auto sales in Europe will weigh on palladium demand in the region in 2013, although its effect will be offset to some extent by increasing substitution of palladium for platinum in light duty Euro 5 diesel catalysts. Small amounts of palladium are used in European heavy duty catalysts too, and greater uptake of platinum-palladium systems in Europe is expected due to implementation of Euro VI legislation for heavy duty vehicles starting in January 2013. In Japan, most of the palladium used in autocatalyst is for light duty gasoline vehicles. As Japanese production of gasoline cars and light trucks is expected to decline this year following the impressive growth in 2012, a corresponding decrease in palladium demand is probable.

In complete contrast, output of light duty vehicles in China, most of them powered by gasoline engines, is forecast to rise substantially this year and this will raise palladium demand significantly. In addition, China 4 emissions standards for gasoline light duty vehicles, introduced for vehicles driven in Beijing from March 2013 and due to be implemented nationwide in later years, will cause average catalyst loadings to rise slightly.

In Russia, palladium demand should be boosted by higher vehicle production and new air quality legislation. The application of Euro 4 standards to all vehicles sold in the country from January 2013 will lead to an increase in the average loading of palladium per car. The story will be similar in Thailand, where gasoline car production is rising strongly and all vehicles have been required to meet Euro 4 standards

since the beginning of the year, with a consequent sharp increase in palladium catalyst loadings.

Demand for palladium in the once-dominant dental and electrical sectors is likely to continue its decline. The major use of palladium in the electrical industry, as the electrode layers in multi-layer ceramic capacitors, is increasingly being confined to military, aerospace and other sophisticated applications, supplanted in other areas by the improving technical performance and reliability of advanced base metal materials. Meanwhile, alloys using palladium are progressively being displaced in dental treatment by ceramics and other alternatives. Demand for palladium catalysts in the chemical sector may well be stable, but palladium jewellery as a significant application is fading like a comet after its appearance in China in the middle of the last decade.

As a result of these trends, demand for palladium is increasingly becoming focused on the automotive sector. Excluding investment, 70% of the palladium purchased by end-users in 2012 was for autocatalyst manufacture compared to less than half of non-investment demand in 2005. This heavy exposure to a single application is potentially a risk for palladium producers. However, production of light and heavy duty vehicles using palladium catalysts for emissions control is almost certain to increase for some years to come. A more critical fundamental factor in the palladium market will be the weak outlook for growth in mine supply, which is likely to maintain the market in a deficit again in 2013 and keep the palladium price underpinned.

## OTHER PGM

**Static primary supply and rising demand will keep the market for rhodium tight in 2013, with the rate of growth in recovery from spent autocatalysts playing a major role in deciding the balance between supply and demand.**

In every region of production we are expecting supply of rhodium to be flat in 2013. Production of rhodium in South Africa will be dependent on platinum output, which we expect to be fairly stable. It is worth noting that many of the South African shafts which have been closed or are threatened with closure are UG2 operations where the orebody has a relatively high rhodium content. We think Russian supply will be broadly at the same level as in 2012, elevated by further recovery of rhodium from old mine concentrates.

Global production of light duty gasoline vehicles is likely to expand this year, requiring more rhodium for autocatalysts as a result. Although consumer demand for new cars in

*Sales of palladium from Russian state stocks are expected to decline again in 2013.*



Europe is still weakening due to economic uncertainty in the eurozone, and there is expected to be some contraction in output in Japan after the strong growth of 2012, output of vehicles in China and other Asian countries is forecast to grow and to more than compensate for the decline in other major manufacturing centres.

Buying by the glass industry should recover in 2013, if not quite reaching the 2011 level. Despite overcapacity in the world for producing flat panel display glass, further LCD production plants are scheduled to be added in China to meet domestic self-sufficiency plans. Inventories of rhodium in the glass industry were reduced in 2012 and will have less impact on demand for new metal this year.

Primary supply of rhodium on its own would be swamped by gross demand but the market will be held to a tight balance in our view by an increase in recovery of rhodium from autocatalyst scrap. Additional material is likely to be made available for refining, partly because many collectors accumulated inventories in 2012.

**Demand for ruthenium took a dive last year but we foresee some recovery in 2013.**

Depleted stocks in the hard disk industry may lead to higher metal requirements, although demand for ruthenium catalysts from the chemical industry could be weaker than in 2012 if metal recovered from spent catalysts is sold back to the market.

**There are no immediate prospects for significant change in the level of iridium demand.**

Chemical and electrical demand for iridium is unlikely to increase by much and there may be some decline in buying from the electrochemical sector as China's upgrading of its chlorine industry nears completion.