

OUTLOOK

- **Platinum expected to be closer to balance in 2010.**
- **Gross platinum demand to strengthen in the automotive sector but weaken in China's jewellery market.**
- **Supplies of platinum to increase in 2010 although constraining factors continue to exist in South African production.**
- **Platinum expected to trade between \$1,600 and \$2,000 during the next six months.**
- **Palladium forecast to be in smaller surplus during 2010.**
- **Gross demand for palladium set to rise due to stronger physical investment and some recovery in the automotive sector.**
- **Palladium production from current mining likely to rise. Further Russian state stock sales expected.**
- **Palladium expected to trade between \$475 and \$700 during the next six months.**

PLATINUM

The short term outlook for South African platinum production is quietly positive. The three newest mines – Blue Ridge, Pilanesberg and Smokey Hills – should continue to ramp up to full production. Other mines such as Two Rivers should produce more platinum in the near term. Continuing progress in developing new shafts at Lonmin should boost underlying production marginally this year although refined sales will be dependent on smelter availability. Production at Impala is set to remain relatively flat but there is some scope for additional sales of refined metal. At Anglo Platinum, the company has acknowledged that it may elect to increase production by up to 200,000 oz of platinum above its planned guidance for this year if the market demands it, suggesting that underlying production should rise above 2009 levels.

Over the medium term, the picture becomes more complex. Production at Impala and Lonmin should return closer to previous peak levels and Aquarius should resume mining at its Everest site (this is currently scheduled for 2010 but significant amounts of refined metal are unlikely before 2011). However, constraints still exist within the industry: the recession has reduced power consumption and temporarily eased power availability problems for the mines. However, as the South African economy begins to recover, electricity usage will start to increase. Although Eskom is installing new capacity, the spare generating margin is limited in the short to medium term. While the pgm producers are now better-positioned to cope with such problems, electricity availability may once again become a constraint on supplies.

Other issues may dog the mining industry in South Africa. The mines controlled costs remarkably well during 2009 but cost pressures still exist and have been accentuated by the strong rand making some production uneconomic and capital

investment less certain. The adequate availability of skilled labour is likely to continue to be problematic too.

There is some scope for further growth in Zimbabwean platinum output. In the short term, output will rise as the current expansion programmes at Mimososa and Ngezi come to fruition. Anglo Platinum's Unki mine is also expected to come onstream. However, further investment to develop these mines into larger operations might not be forthcoming, depending on political developments within Zimbabwe.

The state of the global economy remains the issue of key importance on the demand side of the equation for platinum. While growth remains weak in most countries, market confidence is steadily returning and industrial output is improving. The tightening of domestic monetary policy has raised some concerns over the Chinese economy and could pose some threat to the global recovery but it seems likely that with destocking completed in most sectors and consumer sales rising, global industrial demand should grow in 2010.

In the chemical sector, demand should rise. Higher production of commodity chemicals such as nitric acid will increase plant utilisation and drive increased requirements for top-up catalyst charges. In the glass industry, demand will bounce sharply higher: 2009 saw the closure of several cathode ray tube television glass plants, returning platinum to the market and driving demand to very low levels. With this unlikely to recur this year and a return to growth in the LCD and fibre glass sectors expected, glass sector demand for platinum should rise substantially.

Global automotive output is also expected to show some growth this year and again in 2011. In Europe, light duty vehicle sales are likely to fall following the end of a number of national scrappage schemes. However, vehicle production is set to rise as destocking is essentially complete in this industry. Demand should be further boosted as working stocks of catalysts and metal start to increase once more. The removal

of the distortions in the market caused by the various national incentive programmes should also see a return to more normal buying patterns: the market share of the diesel car is expected to rise and platinum demand will rise with it.

Outside Europe, higher light duty gasoline vehicle production should lead to a modest increase in platinum demand: palladium remains the main beneficiary in the light duty vehicle sector. An increase in heavy duty diesel usage of platinum can also be expected, though: sales of these trucks were depressed during 2008 and 2009 as fleet owners delayed their purchases. With the global economy recovering, some of these deferred purchases should take place this year, with demand for both new heavy duty diesel vehicles and platinum likely to rise from last year's weak levels.

The health of the global jewellery sector also remains of great relevance to the platinum market. An improving North American economy could boost jewellery demand in that region. European jewellery demand could also rise marginally as consumer spending starts to recover. However, in Japan, gross platinum demand is likely to fall as the higher metal price negatively affects the affordability of platinum jewellery.

In China, gross jewellery demand is likely to fall in 2010. Last year saw the industry build its stocks by at least 300,000 oz. This restocking is unlikely to recur this year. At the time of writing, there have been some early indications of manufacturers reducing metal inventories in response to the recent rise in the platinum price. However, the health of the industry is better indicated by underlying manufacturing and retail demand. The rising platinum price has started to affect the affordability of platinum jewellery in China and manufacturing rates have fallen from the heights of 2009, although, if the bullion price were to fall, consumer demand can be expected to recover closer to last year's levels.

The direction of the platinum price is therefore of key importance to this sector and the trajectory of underlying Chinese demand remains uncertain, although sales of metal on the Shanghai Gold Exchange have been weaker so far this year than in 2009. One point of note, however, is the growing possibility that the Chinese Government will allow its currency to appreciate against the US Dollar: this would have the effect of reducing the local metal price which would accordingly support demand.

Physical investment demand had a significant effect on the platinum market during 2009 and is expected to do so once again in 2010. The launch of Exchange Traded Funds (ETFs) has opened investment in platinum to a wider group of potential investors than ever before. The launch of a physically-backed

US ETF in January of this year has already proved significant in terms of demand. After three months of trading, the inflows of metal had slowed but US holdings had reached some 320,000 oz of platinum. We believe that the initial pace of investment was driven partly by the release of pent-up investor interest and that the more recent, lower running rates are more representative of ongoing demand. However, metal flows appear to be related to price performance and overall annual demand is hard to forecast with any degree of confidence.

In the recycling sector, we expect to see a return to more typical patterns of car scrappage and platinum recovery from spent autocatalysts should rise. Platinum recycling from the jewellery industry in China and Japan is also likely to be boosted by high current metal prices.

Overall, it seems likely that the platinum market will return closer to balance during 2010 as rising demand outweighs steady growth in supplies. On a fundamental basis, this recovery in demand might be expected to lead to a bullish price environment. However, concerns remain over the global economy: recovery is painfully slow in many countries and worries over the sustainability of Chinese economic growth have surfaced. National credit issues also continue to weigh on the Euro, applying some downward pressure to the platinum price. If these concerns dominate the market, platinum could trade as low as \$1,600 during the next six months, although we would expect to find strong physical support from Chinese jewellery purchasing at these levels.

Investment activity has become a major influence on the platinum price. Net long speculative futures positions currently stand at very high levels and, although ETF demand has slowed since early 2010, total holdings are very substantial. If interest rates remain low and the gold price stays at its current elevated levels, net investment inflows into platinum are likely to continue, and the platinum price could trade as high as \$2,000 within the next six months.

PALLADIUM

Supplies of palladium are forecast to rise in 2010. Supplies of palladium from current Russian mining are expected to increase marginally, in line with higher nickel output from Norilsk Nickel's Polar and Kola operations. We also expect sales of the remainder of the palladium originally shipped from Russian state stocks in 2007 and 2008, equating to roughly one million ounces. Little if any clarity exists in the longer term about the size and likely fate of remaining palladium stocks. However, over ten tonnes of palladium

was shipped into Switzerland in early 2010, apparently also from Russian state stocks. We do not currently expect this material to be sold this year although such sales remain possible and, if they were to occur, would boost supplies further.

South African production should increase with output expected to grow steadily at the three largest producers. Supplies from some of the smaller producers are also likely to rise, reflecting the ramp-up in production at the three new mines – now owned by Aquarius, Platinum Australia and Platmin – and at a number of other operations including ARM and Norilsk Nickel's Nkomati site. Should Anglo Platinum decide to increase its production and sales in order to meet demand in the platinum market, its palladium supplies should climb by at least another 100,000 oz.

In the medium term, as with platinum, constraints remain on South African production but output is nonetheless likely to grow. Zimbabwean supplies should also increase in 2010 as Unki comes onstream and both Mimosa and Ngezi continue to expand. Further growth after this date is likely to be dependent on the local political situation and operating environment. North American supplies may fall in 2010 due to continued industrial unrest in the nickel industry but should return to growth thereafter as North American Palladium increases production at its Lac des Iles mine and nickel production returns to normal levels.

Palladium demand should increase during 2010. Of greatest importance, global automotive output should recover some of the ground lost last year. A gradual recovery in the world's economic situation has reassured consumers and made them more willing to buy new vehicles after delaying purchases over the previous eighteen months. Additionally, the destocking of vehicles, parts and metal that so harmed demand during 2009 has now been completed. Rebounding vehicle output will therefore drive demand higher in Japan, North America and the Rest of the World region in 2010 and 2011. In China, the new Euro 3 and Euro 4 equivalent emissions regulations will be in place for the whole of 2010 having only been introduced in mid-2009, boosting average catalyst loadings. With Chinese vehicle production expected to remain strong, the weight of palladium used in this country should increase significantly.

In Europe, light duty vehicle production is forecast to rise but with the diesel vehicle set to recapture some of the market share it lost last year, the use of palladium on gasoline vehicles is set to decline. However, the continuing introduction of platinum:palladium catalyst formulations on diesel vehicles to replace platinum-only technology is expected to drive total

European autocatalyst demand for palladium higher.

Industrial demand for palladium is also set to grow in the short to medium term. The healthier economic landscape should lead to higher demand for consumer electronics and this should increase demand for palladium from electrical applications such as its use in plating and multi-layer ceramic capacitors. However, the increase in demand is expected to be relatively slow. In the chemical sector, demand should also rise as more new capacity is installed this year. Requirements for top-up metal for process catalysts and nitric acid catchment gauzes will rebound as plant utilisation rates increase to more normal levels. Dental sector demand for palladium can again be expected to decrease marginally, as it continues its slow decline by losing share to non-precious metal treatments.

The outlook for the palladium jewellery market is less positive. There are good reasons to anticipate rising demand in Europe and in North America where palladium has gained some market acceptance as a jewellery metal.

In China, however, the manufacturing of palladium jewellery has become concentrated in the hands of a relatively small number of companies due to the higher profits available in platinum. The availability of palladium jewellery at a retail level within China remains highly uneven, suggesting that any upside in demand growth is likely to be limited even with gold and platinum prices currently at high levels. In fact, we believe that the pricing challenges of palladium, its limited brand presence and poor exchange or buy-back value – despite its rising price – make it more likely that Chinese palladium jewellery demand will decrease this year. Without a sustained, coordinated marketing effort, it seems unlikely that gross palladium demand for jewellery will return to anywhere near the peak levels of 2005.

In the investment sector, demand seems certain to increase this year. The January 2010 launch of a US-based Exchange Traded Fund has changed the outlook for this sector dramatically. Investors purchased a total of 430,000 oz of metal within the first month of this fund's existence and, although investment flows have since slowed, demand through this fund alone had already reached 550,000 oz by the end of March. In Europe, however, investment flows appear effectively to have stalled, suggesting either that some investors are now happy to realise profits they have generated or that some of the European investment activity has been displaced into the North American market.

Finally, we expect recycling of palladium from open loop sources to increase this year. While palladium recovery from jewellery recycling is likely to fall to very low levels – since

there is now little redundant Pd950 jewellery stock at retailers in China and exchange of old jewellery remains limited – the recovery of metal both from spent autocatalysts and end-of-life electronics should rise as scrap rates approach normal levels.

We therefore expect the palladium market to be in oversupply in 2010, although the surplus is likely to be smaller than in 2009. If no sales of metal from Russian state stocks take place, it is highly likely that the palladium market will be in a fundamental deficit.

Price movements over recent months indicate that many investors see potential long term profits in this metal, perhaps driven by speculation that Russian state stocks are now effectively almost exhausted. Interestingly, the abnormally large shipments of metal into Switzerland of early 2010 did little to dent the investment community's bullishness. If investors continue to build on their large futures and ETF positions, as they have in recent months, recovering industrial and automotive demand could help drive palladium as high as \$700 during the next six months.

Much of the positive sentiment around palladium derives from the prospects of economic recovery. If Chinese growth were to slow or industrial and automotive output were to falter, the palladium price could soften. Any spell of dollar strength or weakness in the gold price could see investment outflows from futures, ETF and physical positions, which could drive the price to trade as low as \$475 within the same six months.

OTHER PGM

We expect rhodium to be in another large fundamental surplus in 2010. Supplies of rhodium are unlikely to change significantly from 2009. Production of refined rhodium was hit by a build-up in pipeline stocks in 2008 and some of this metal was refined and sold in 2009, boosting supplies strongly. With the pipeline now less full, sales of rhodium should revert to closer to the level of mine output. So, although increasing production from rhodium-rich UG2 ore on the Bushveld Complex should boost underlying output, supplies will rise by less this year. Rhodium supplies from other producing nations should remain flat.

Demand for rhodium remains heavily dependent on the automotive sector. This industry is slowly recovering and vehicle output is expected to rise in most regions in 2010 although it is unlikely to reach pre-crisis levels in most countries in the short term. As sales of automobiles improve, the car industry can also be expected to restock with the

numbers of unsold finished vehicles rising and an increase in working stocks of metal and catalytic converters. Rhodium demand will thus increase this year and should climb again in 2011, with a minor boost coming from the introduction of new emissions legislation in a number of countries. However, the auto makers will continue to introduce lower rhodium-loaded technology where this is available, restraining growth in rhodium demand to some degree.

Rhodium demand should recover in the glass industry. At the current price differential between platinum and rhodium, it remains attractive for many glass producers to increase the rhodium content of their alloys in order to extend the working lifetime of their manufacturing equipment and this should support demand this year. More importantly, the fibre glass and LCD television glass markets have started to return to growth in 2010. Glass makers will therefore install more capacity, leading to higher demand than in 2009.

During 2009, rhodium attracted a reasonable amount of speculative over-the-counter interest, which helps to explain much of the disconnect between a substantial fundamental surplus in this metal and its strong price performance. Due to the nature of these investment flows, it is hard to forecast at the time of writing whether they will persist during 2010.

Ruthenium demand should return to growth in 2010, largely due to increased demand from the hard disk industry. Perpendicular magnetic recording (PMR) is now the dominant hard disk technology and this market should start to grow rapidly once more as computer sales recover, driving ruthenium usage higher. As importantly, the hard disk makers have reduced their working stocks of ruthenium and are no longer able to source the majority of their requirements from material they had previously bought. Purchases of ruthenium by the industry – equivalent to demand – are therefore rising strongly.

Electrochemical demand for ruthenium should be supported by continued investment for chlor-alkali production and process catalyst demand should start to recover, as in the platinum and palladium markets.

Iridium demand is also forecast to perform well this year. Increasing car production will boost iridium demand for use in high-specification spark plugs. Demand for iridium crucibles for growing high-quality metal oxide single crystals is also set to rebound. Electrochemical demand should strengthen again, reflecting the continuing conversion of mercury cell chlor-alkali technology to more environmentally-friendly membrane cells in Asia and in other regions.