ScotiaMocatta

Precious Metals 2014 Forecast

PGM

November 2013

Scotiabank™

GLOBAL BANKING AND MARKETS

Executive Summary

- At the start of 2013, interest in Platinum and Palladium was strong as the markets were concerned about the potential for further labour unrest in South Africa, but as the year progressed, prices started to be influenced by the bouts of weakness that hit Gold prices.

- Palladium demand has been underpinned by stronger than expected recoveries in US and Chinese auto sales and that is expected to continue into 2014. A recovery in EU auto sales should help Platinum too.

- Fund interest in the PGMs has generally held up well, especially for Palladium.

- Investor interest in Platinum is at record levels with the South African ETF proving to be very popular, we wait to see if the new Palladium ETF does as well. Holdings in the Rhodium ETF are also growing.

- Industrial demand for all metals is expected to pick-up through 2014, in line with ongoing economic recoveries.

- We are moderately bullish basis the demand outlook, but with the markets in supply deficits, the risk lies in South Africa supply.

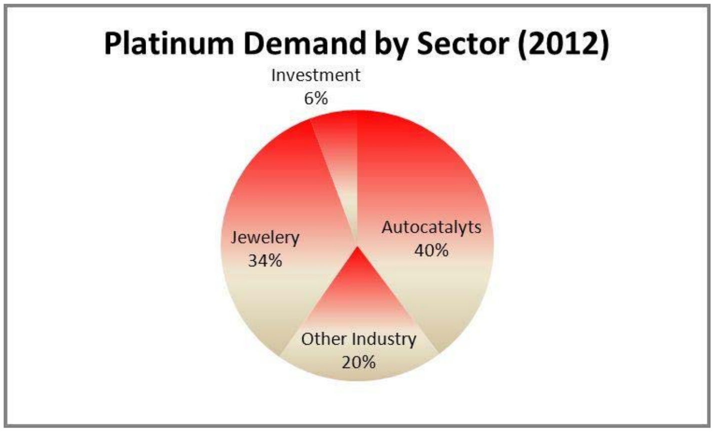
Platinum

Introduction

After starting 2013 on a strong note with prices reaching $1,742/oz in February, Platinum prices started to trend lower as a lack of follow through strike action in South Africa, plus continuing poor auto sales in Europe, weighed on sentiment. The sell-off in Gold prices in April and again in June carried Platinum prices with them, with Platinum reaching a low at $1,294/oz in late-June. Prices then went on to recover over the summer months on a combination of labour unrest in South Africa's Gold industry, which prompted fears that the unrest would spill over into the Platinum industry and as the launch of a new Platinum ETF in South Africa attracted strong buying. Prices were then once again dragged down by weakness in Gold as the market focused on the possibility that the Fed would start tapering its quantitative easing (QE) later in the year. The situation as we approach the end of 2013, is that despite the Platinum market being in a supply deficit and despite labour unrest in South Africa, that could well escalate, prices remain under pressure. The outlook for Platinum in 2014 is robust - the European auto industry looks set to rebound and the recovery in China, combined with rising disposable incomes, should continue to underpin strong demand for jewellery. Investment interest is also likely to remain robust and indeed, could start to see more widespread growth again if the labour unrest in South Africa escalates. Indeed, as well as South Africa being critical for Platinum supply, it has also become an important consumer as its ETF is now the largest of the Platinum ETFs. On balance we remain bullish for Platinum prices in 2014.

DEMAND

Platinum demand comes from four distinct sectors – the auto industry, jewellery manufacturing, industry and investors. In industry the main users are the chemical, electronics and glass industries. This diverse group of buyers provides the Platinum market with numerous swing factors that help to regulate supply and demand during the economic cycle as each group is motivated by different events. Demand from the jewellery industry tends to be price elastic, while demand from industry tends to be inelastic. Investment demand via exchange traded funds (ETFs) remains important and holdings are at record highs, which means investors are still bullish.



In terms of demand Platinum is a growth market, 8.03 Moz were consumed in 2012, up from 5.7 Moz in 2000, with demand from the auto and chemical industries the main industrial drivers, while investment demand has also been a strong growth area. Demand did drop in 2012 and the main reason for that was due to restructuring in the glass industry following the building of too much capacity in 2010 and 2011, which led to plant closures in 2012, with metal being returned to the market. Demand in 2013 has however, picked-up across most industries as global economic growth has recovered. Because of Platinum's broad base of uses, there are numerous cross currents affecting demand at any one time, but these can have a smoothing effect on total demand. Looking forward into 2014, we expect the demand to do well, we expect the economic recoveries in China, the US and Japan to gather momentum and Europe is also likely to start to recover more. The areas of potential concern are the impact tapering will have on US interest rates (not the discount rate, but the corporate rates and the interest rates that affect household spending) and how less liquidity will impact economic growth in emerging markets.

Autocatalyst demand

Platinum's use in autocatalysts accounted for 37% of total demand in 2012. In 2007, before the credit crisis, autocatalysts accounted for 50% of demand. This drop highlights two developments - firstly that global auto sales have not recovered from the boom times seen between 2004 and 2007 and secondly that Platinum's use in autocatalysts is suffering substitution from cheaper Palladium. Between 2004 and 2007, US vehicle sales were running at an annualised rate of around 17 million units, compared with an average of 15.5 million in the first ten months of 2013. The amount of Platinum used in autocatalysts in 2012, however, was 23% below what was used in 2007, while demand for Palladium from the autocatalyst industry in 2012 was 53% higher than what it was in 2007. The change in demand for these two metals is not all down to substitution; demand for Platinum autocatalysts has also suffered due to regional trends. In Europe, diesel vehicles, that use platinum-based autocatalysts, have a bigger market share than petrol vehicles and therefore due to the economic hardship in Europe demand for Platinum autocatalyst has been weak relative to Palladium autocatalysts. However, with a recovery in Europe underway now there is likely to be some pick-up in demand for new vehicles, especially as we would expect considerable pent-up demand in the region. Over the past five years of hardship we would imagine that first time buyers have been thin on the ground, so once youth unemployment falls, the auto industry should receive an extra boost as a backlog of first time buyers start to buy – however, this might still be some years off. Global auto sales for light vehicles are expected to grow 3.2 percent in 2013, according to Moody's Investors

Service and their forecast for 2014 is for 4.8 percent growth, with China highlighted as the country where growth is really accelerating. It now expects auto sales in China to grow ten percent in 2014, up from its earlier forecast for seven percent and this will be off a high base considering the strength of sales this year. In the US, auto sales have recovered at a faster pace than expected and with the age of the vehicle fleet at around 11.4 years, strong sales are expected to continue next year. That is as long as interest rates do not damage the market for vehicle loans – it is estimated that 80 percent of US vehicle purchases are leveraged.

Other industrial uses

Platinum is used in an extensive range of other products and applications, which include use in the chemical, glass, electronics, non-road emission control equipment and industrial manufacturing. Collectively these industries accounted for some 20 percent of total Platinum demand. Demand from these industries is robust this year with all sectors showing a recovery from 2012 that is with the exception of the petroleum industry. The glass industry underwent some restructuring in 2012 with capacity being cut in developed countries, but new capacity has been be built in China and other emerging markets that should feed through to good demand for this year and next. The same is true in the chemical industry as growth in the region leads to additional requirements for local capacity.

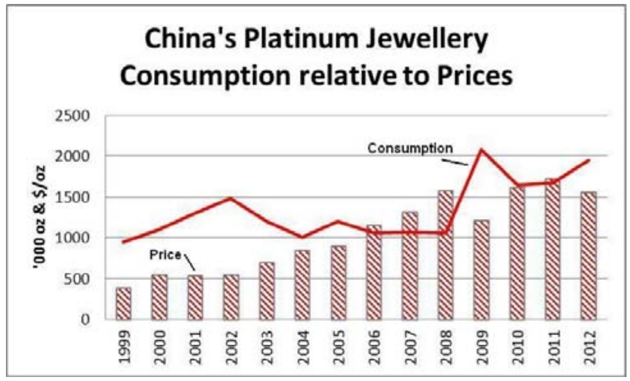
Use of Platinum in the electronics industry, where it is primarily used in computer hard drives, has been quite volatile in recent years. Demand was hit in 2012 when the Thai electronics industry suffered major flood damage, which meant less production and a drawdown of hard drive inventories, but there has been a recovery this year. That said, with more consumers switching over to tablet and laptop computers, rather than desktops, demand for hard drives is suffering as the smaller devices tend to use solid state drives. However, countering that is the pick-up in demand for hard drives used in commercial data storage. Generally the electronics industry is expected to grow 2.1 percent this year, according to World Semiconductor Trade Statistics Group and accelerate to around 5.1 percent in 2014.

Jewellery demand

China is the largest market for Platinum jewellery, followed by Japan, North America and Europe. Jewellery accounted for around 34 percent of total Platinum demand in 2012 and 70 percent of jewellery demand comes from China, according to Johnson Matthey. As such, China is all important to the jewellery market. By comparison, Japan consumes 11 percent, North America 6.7 percent and the Europe 6.5 percent. Not surprisingly jewellery demand is price elastic, so the run up in prices in 2007 and 2008 saw demand fall, but then it jumped in 2009 to 2.8 Moz from 2.06 Moz in 2008. Demand dipped again in 2010 and 2011 to around 2.45 Moz, but recovered to 2.78Moz in 2012. This year lower prices, more economic stability and the avoidance of a hard landing in China are expected to see jewellery demand recover and the outlook is robust for next year as ongoing economic recoveries and growing disposable incomes in China are bound to lead to higher jewellery sales - at least as long as prices do not climb excessively.

Regionally demand is expected to recover in Europe this year and next, the same is true in North America, while demand in emerging markets is expected to be strong as disposable incomes rise to the extent that Platinum wedding rings become affordable to more households. In China, as this unfolds, more Platinum jewellery stores are opening up in third and fourth tier cities. India is another area where we expect a one-off pick-up in demand as the market reacts to the distortions in the Gold market that government restrictions have brought about. The one area where demand seems to be slipping is in Japan, where demand was 310,000 oz in 2012, down from over a million ounces in 2000. The relentless fall in demand in Japan is partially down to demographics and falling marriage rates.

Overall, considering how much of global Platinum jewellery is sold in China and given households' growing disposable income, we feel the outlook for Platinum jewellery demand is robust. As the chart opposite shows, the trend in consumption is upward despite generally higher prices, but it is also noteworthy that price dips seem to attract strong buying.



SUPPLY

2012 showed how critical South African production is to the Platinum market as when labour unrest turned ugly in August prices rallied 25 percent. This year, strikes over wage negotiations are once again being seen at some operations, but for now the market has not reacted as bullishly as they did last year. The potential for further strikes seems high as there are now two main unions fighting for membership and neither union is likely to want to be seen as the weaker one. With the National Union of Mineworkers (NUM) demanding wage hikes as high at 43 percent and some producers offering increases of between 8 and 9 percent there is a big gap to be negotiated. The Association of Mineworkers and Construction Union (AMCU) has also recently been given permission by the government to call legal strikes at some mines, but so far has refrained from doing so. There is a belief that the AMCU might be waiting to get permission to strike at other mines too before calling for one big strike. South Africa produces around 72 percent of the world's mined Platinum output and accounts for 53 percent of total refined supply (mine output + supply from recycled materials). Any disruptions therefore have potential to have a significant impact on supply and prices.

In 2008, power shortages in South Africa forced the industry to cut production and that sent prices to an all time high of $2,300/oz. Further power shortages are possible, indeed Eskom, South Africa's power supplier, as recently as mid-November, declared an emergency when power reserves went into the red and some large industrial users had to cut consumption, something which has not happened since 2008. Whether this was a one off, or is the start of another period of power shortages that could affecting mining and smelting remains to be seen, but it does mean that South Africa is very much in focus with regards to Platinum supply.

Producers in South Africa are also struggling to maintain profitability and as a result a number of producers are rationalising their operations, which has led to some capacity closures. Rising labour, energy and import costs are leading to higher costs of production, although a weaker currency with the Rand falling to 10 to the dollar, compared with 8.5 at the start of the year is providing more local currency revenue. Overall, the full effects of this year's closures on next year's production will be somewhat offset as new capacity is brought on line, but generally we do not expect much growth in mine output in 2014, indeed strike action could end up seeing it fall.

In Russia, output has generally been in decline in recent years; production peaked in 2001 at 1.3 Moz, but fell to a low of 785,000 oz in 2009. It recovered to 835,000 oz by 2011, but has since started to fall gain, reaching 800,000 oz in 2012, according to data from Johnson Matthey and that weaker trend is expected to continue as ore grades deteriorate. In 2013, output has also been affected by maintenance shutdowns at the Talnakh operation. Russian Platinum production accounts for 14.2 percent of global mine output and 10 percent of the World's refined supply.

North American production recovered in 2011 after the long strike at Vale's Sudbury operations in 2010. In the few years before that, North American production averaged 330,000 oz per year, it then dropped to 210,000 oz in 2010, before recovering to 350,000 oz in 2011, it then dropped back to 310,000 oz in 2012. Output is expected to pick-up slightly this year as Vale has reportedly been targeting copper-rich ores that tend to have a higher PGM content. The new Totten mine should start to add to production in 2014. In 2012, North America production accounted for 5.5% of global refined output.

Zimbabwe's production has been climbing at a fast pace in recent years, from 165,000 oz in 2006, to 280,000 oz in 2010, 340,000 oz in 2011 and 2012 and is expected to reach 400,000 oz in 2013. This makes it the third largest producer in the World with some seven percent of production and further expansion is underway, which suggests production will increase in 2014 as well. This spate of growth in Zimbabwe, however, may not last as changes were made to the law in early 2011, which means indigenous Zimbabweans must hold a majority ownership (51%) of all operations. This and other government intervention, such as the possible banning of unprocessed Platinum exports and the raising of royalties, are likely to see foreign investment in the mining sector put on hold. All in all, it looks as though investments made before these changes were made are now bearing fruit, but the uncertainty the changes are causing may well make it hard to attract future development finance.

Recycled material

Supply from recycled Platinum is a growth market as more of the vehicles that are reaching the end of their life-cycles now have autocatalysts. In addition, the world's vehicle population has also taken off in the past ten years with the growth in sales in the emerging markets. Economic hardship, higher PGM prices and greater access to scrap-for-cash schemes have also led to more jewellery being sold for scrap. New legislation in some countries, which means electrical waste has to be recycled rather than sent to landfill, has also increased the amount of metal returning to the market. The run up in prices in 2010 and 2011 led to a surge in recycling with average gains in those years of some 20 percent, the rate has slipped recently, mainly as less old jewellery has been scrapped. In 2012, supply from recycled metal accounted for 26.5 percent of total supply.

Investment demand holds up well

Holdings in the Platinum ETFs continue to rise, at the time of writing they stood at 2.41 Moz, up from 1.64 Moz at the end of 2012. This represents a rise of some 48 percent. Given that holdings in Gold ETFs have fallen 29.5 percent it is interesting that Platinum investors have been so bullish. That said, given the bullish fundamentals we are not so surprised, especially as Platinum prices also seem to have been dragged down by Gold prices. However, the rise has not been universal across ETFs, in May a New South African ETF called NewPlat was launched and that now holds 782,194 oz. This accounts for the entire rise in the ETFs this year, indeed excluding NewPlat, the other ETFs are down 6,790 oz. What is more the South African ETF is now the largest Platinum ETF.

With the ETFs now holding a large volume of metal, which is extremely liquid, the market needs to be aware that a heavy spell of redemptions could prompt a significant price sell-off. However, unless the global economic recovery is derailed, which we do not think will be the case, the fundamental outlook is bullish for Platinum. If investment buying is removed from the supply / demand balance then the market is likely to show as small surplus of 160,000 oz this year. When investment buying is taken into account then the market is likely to be in a deficit of 605,000 oz, according to Johnson Matthey data. Investors therefore are now a major swing factor in the Platinum market.

Funds

The net long fund position (NLFP) peaked in February 2013, at around 50,000 contracts; it then plunged to 20,982 contracts in early July. Interestingly the gross long position dropped around 15,000 contracts during the correction, while the short position climbed some 17,000 contracts. Since the trough in the NLFP in July, most of the rebound has been driven by short-covering with the gross long position still some 13,500 contracts below the February peak. Generally the NLFP is still relatively high compared with recent years, which is not surprising given the strong fundamentals.

Technical

Platinum prices fell in line with other metals during the first half of the year, breaking below the lows around $1,380/oz seen in the summer of 2012 and the December 2011 low at $1,343.60/oz. Prices went on to set a low at $1,294/oz in June. The market has since rebounded to the 50 week moving average to set a high at $1,555/oz before dropping back to around $1,360/oz. As such, the market has become quite volatile. Looking at the chart there does seems to be a band of support between $1,360/oz and $1,294/oz that has contained the troughs since late 2011. The 50 week moving average seems to switch from providing good support to capping the market. As such, for now we would look for prices to trade in the $1,300/oz to $1,500/oz range.

Conclusion and Forecast

The longer term outlook for Platinum looks robust as supply is struggling to keep up with non-investment demand, which means even a relatively small amount of investment demand can cause a supply deficit, as has been the case in 2012 and 2013. With producers struggling to be profitable in South Africa, which is where the growth potential lies, there is little incentive to invest in the industry while prices are at these levels. If there was a marked increase in demand, which may well happen further down the road on the combination of tighter and more widespread emission legislations in emerging markets, faster growth in vehicle sales and strong demand for jewellery, then producers may well struggle to lift output. Given this it is not surprising that investors have held on to their ETF holdings.

The other factor that jumps out at us is how South Africa is now not only a major factor on the supply front, but has also become a significant feature in the demand equation through the massive uptake in its NewPlat ETF. We cannot help wonder whether local knowledge of the state of the mining industry, power and labour situation, are driving investors into Platinum as they can see issues down the road.

With global economic growth looking likely to be more robust next year and with potential for good demand from China's auto and jewellery market, plus a recovery in Europe, we feel the demand outlook looks secure. The feeling in the market is that producers have sufficient stocks to balance the market given the supply/demand deficit and the deficit may be less next year if investor buying slows. However, given the outlook and the thought that Gold prices are holding Platinum prices down, plus the potential for strikes in South Africa, broad base investor interest may well pick-up next year.

In the short term, we expect prices to remain rangebound between $1,300 and $1,500/oz, but we would expect prices to react positively if there is further strike action, or continued industrial demand and then as 2014 unfolds we think prices are likely to move back over the 50 week moving average to trade in the $1,450 to $1,650/oz range.

Palladium

After the rally in the second half of 2012, which was fuelled by labour unrest in South Africa, Palladium prices have oscillated sideways throughout 2013, albeit within a wide range between $787/oz and $630/oz. With the market in a supply deficit, prices have managed to hold up at relatively high levels, but being a precious metal Palladium prices have been dragged lower at times by the weakness in Gold. The fundamentals for Palladium are strong and look set to strengthen in 2014 as a more broad based recovery gets underway. In addition, sales from Russian stockpiles are expected to wither – stockpile sales had up until recent years filled the structural gap between supply and demand. Once stockpiles sales actually dry up we think that will have a bullish psychological impact on the market. Given the supply deficit and it is a deficit that is not being caused by investment offtake, plus the potential for supply disruptions in South Africa, we feel there is a high risk of prices breaking up through stiff resistance in the high $770-$790/oz area and that could then lead to prices challenging the ground seen in 2011.

Autocatalysts

Autocatalysts accounted for some 67 percent of Palladium demand in 2012 and the recovery in the auto industry from the 2009 recession has been swift with demand up 66 percent since 2009, according to data from Johnson Matthey. Demand has been robust so far in 2013 as the US auto industry has surprised on the upside, as has the Chinese auto market. This year early forecasts were for US auto sales to climb to 15 million units, while in the first ten months of the year sales have been running at an annualised rate of 15.5 million units. The Chinese auto market has also recovered well, after only growing 4.3 percent in 2012 and after a forecast for 8.5 percent growth this year, actual sales in the first ten months have climbed 13.5 percent according to data from the China Association of Automobile Manufacturers (CAAM). In Europe, car sales have been falling for most of the year, in the January to October period they were down 3.1 percent and 2013 is likely to be the 6th year of declining sales. But, in recent months they have started to see some year-on-year growth.

Out of total Palladium demand the breakdown of regional use by autocatalyst manufacturers is: North America 18%, Europe 14.5%, China 15%, Japan 8% and the rest of the World 13%.

The medium term outlook for Palladium demand from the auto industry is robust as due to the age of the US vehicle fleet, sales are expected to remain strong in 2014. The European market is expected to start to recover with forecasts for a 2.5 percent increase in sales in 2014 and sales in China are likely to remain upbeat. Although more stringent car sales quotas in some of China's leading cities will hit demand, it is thought that car manufacturers will boost sales in lower tiered cities. There is massive potential for demand for cars in central and western parts of China to grow and with a car-ownership rate of 58 per 1000 people (basis 2010 data), compared with a global average of 175 and a US average of 800, the long term outlook is second to none. Moody's Investors Service expects auto sales in China to growth ten percent in 2014, up from its earlier forecast for seven percent and this will be off a high base considering the strength of sales this year.

One development that could dampen vehicles sales next year in the US and in emerging markets outside of China, is if the tapering of QE in the US forces up the interest rates on car loans. In addition, following the capital flight that was seen in some emerging markets when tapering was first mentioned, if emerging markets suffer economic hardship once tapering gets underway then that could impact auto sales in those regions affected. On the plus side, tighter emission legislation and a wider global adoption of legislation should increase demand for autocatalysts and the PGM loadings within them.

All in all, demand for Palladium in emission control catalysts is expected to show growth of around 4% in 2014.

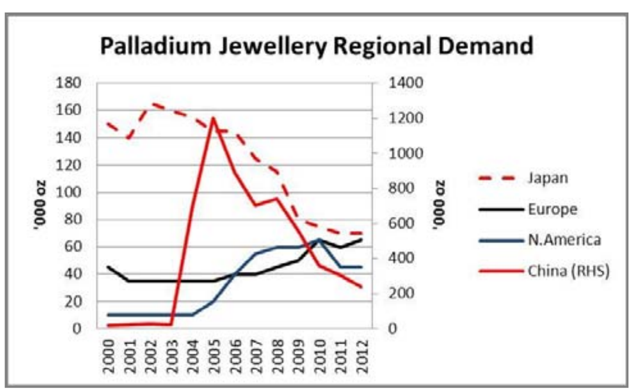
Other industrial uses

Palladium's other industrial uses include electronics, industrial manufacturing including chemicals, glass and other emission control equipment for factories and petrol-powered machinery, such as garden equipment. In 2012, these industries accounted for 23.5 percent of Palladium demand. The economic rebound in 2010, saw demand for Palladium from these industries climb seven percent, but demand from these sectors has more recently been falling as Palladium faces substitution from other materials. In 2012, demand fell 4.7 percent, according to Johnson Matthey data and is expected to fall 6.6 percent this year. The main area of substitution is being seen in the electronics market, which is the largest consumer in this group of industries with demand accounting for some ten percent of total demand. Nickel has been substituted for Palladium in some applications and in others Palladium-nickel alloys are being used to save costs. The chemical industry consumes around five percent of Palladium and that is largely used to refine nitric acid used in the manufacturing of nylon and polyester. As manufacturing has moved from West to East, new capacity for these materials has been built in China and now the growth market is shifting to India. Another growth area for the metal is water purification where Palladium is used to clean contaminated groundwater. Palladium's use in dentistry is also in decline as ceramic treatments are becoming more standard. In 2012, 530,000 oz of Palladium was used in dentistry, which is down from over a million ounces in the 1990's.

Although demand is slipping in the electronics industry and in dentistry, medium term we expect other applications, such as water treatment and the tighter emission restrictions for factories and petrol-powered machinery, to lift demand again.

Jewellery demand

Palladium jewellery has had an interesting past ten years or so. Demand took off in 2004 as higher Platinum prices started to squeeze the profit-margins of Platinum jewellery manufacturers. Platinum jewellery has been a swing factor within the Platinum market for years, so when prices started to climb above $850/oz in early 2004, demand for Platinum jewellery started to fall and

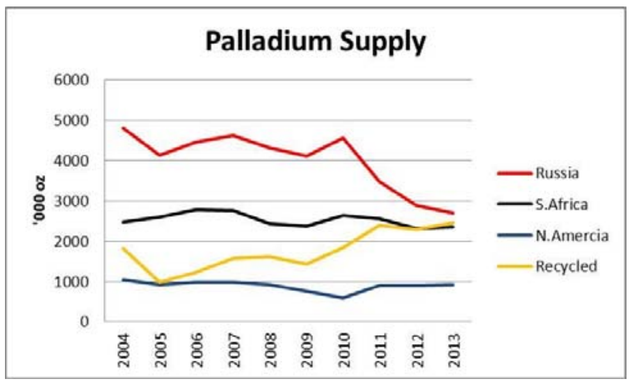


jewellery manufacturers started to use Palladium, which in early 2004 was trading around $200/oz. The potential profit margins meant demand soared. In 2003, some 250,000 oz of Palladium was used in the jewellery industry, it climbed to 925,000 oz in 2004, 1,425,000 oz in 2005 and then averaged 1,025,000 oz between 2006 and 2008. But as the chart shows, demand in China is now falling steadily and it remains to be seen whether demand flattens out as it has in other countries, or continues to sink. Japan's affinity for Palladium jewellery has started to stabilise have being in decline for a decade. This is also the situation in the Europe and North America where Palladium has carved out a niche market as a metal for men's jewellery. It will be interesting to see whether Palladium jewellery becomes more popular as Palladium prices rise relative to Platinum, which they have been doing in recent years with Palladium now around $660/oz below Platinum, compared to $1,200/oz below in 2010. Psychologically we would have thought there is room for jewellery priced in the middle between the high priced Gold and Platinum jewellery and relatively cheap Silver jewellery.

For 2014, we expect Palladium demand from the jewellery industry to continue to decline as its popularity in China falls, we expect demand to remain stable in other regions and would not be surprised if in time demand does turn higher again as we think there is potential for Platinum prices to rise strongly in the years ahead and that might well prompt jewellery manufacturers to promote Palladium jewellery again.

Supply

Palladium supply in 2012 came from mine output (71%), recycled material (26%) and stockpile sales (3%), according to Johnson Matthey data. As the chart opposite shows, supply from Russia is in decline, while metal sourced from recycled material is on the increase, output in South Africa has been in decline, but has stabilised, while in North America production is edging higher.



Russian supply is dropping on two counts. Mine output is falling due to lower ore grades and sales from stockpiles have also fallen. Between 2004 and 2010, sales from stockpile averaged 1.2 Moz, they dropped to 0.78 Moz in 2011, 0.26 Moz in 2012 and are expected to be around 0.2 Moz this year. The amount of Palladium Russia holds in stockpile is a state secret – the general view is that after years of sales from stockpile, the stocks are nearly depleted and the market is now discounting that sales will dry up before too long.

Countering the fall in stockpile sales is the rise in Palladium from recycled material, which would be equivalent to 39 percent of mine supply. This is now the second largest source of supply having overtaken South Africa production this year. It is also a growth market for a number of reasons – the global vehicle population is growing, a higher percentage of vehicles that are now scrapped have autocatalysts and the PGM loadings have generally grown as emission standards have tightened. This year Johnson Matthey expects 2.46 Moz to be recycled, up from around one million tonnes in 2005.

South Africa accounts for 37 percent of mine supply and the country has the largest resources of PGMs and the most potential to increase supply. The country's producers, however, are struggling to lift supply as strikes and safety stoppages keep production below capacity and the current situation in the mining industry means producers face a multitude of issues that are restraining production. The likelihood of further labour unrest seems high and this is the main risk facing the market in 2014, we think.

North American supply accounts for 15 percent of total mine production and production looks set to edge higher as most operations seem to be running smoothly. Increased output is also expected in Zimbabwe as expansions are ramped up. Given the uncertainty in the mining industry about the greater government interference on ownership and land holdings, output is at risk going forward as producers may find it harder to raise financing. For now, however, with expansions underway output is expected to rise in 2014.

Total mine production of Palladium in 2012 was around 6.27 Moz, down from 6.59 Moz in 2011 and output this year is expected to recover to 6.33 Moz. On top of this, supply from recycled material is expected to be 2.46 Moz this year and stockpile sales of 0.2 Moz, should mean total supply of 8.99 Moz. This compares with likely gross demand of 9.635 Moz, leaving a supply deficit of 0.64 Moz.

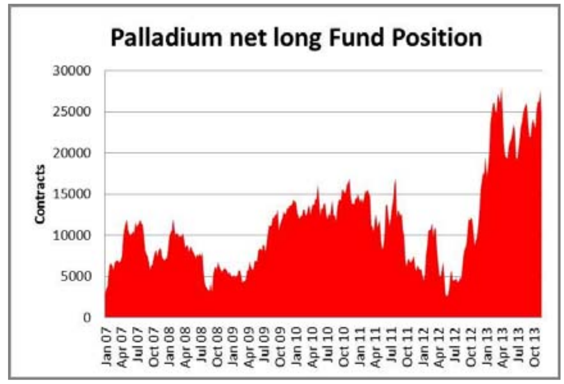
In 2014, Palladium supply is expect to increase by 150,000 oz, with mine output rising marginally in all regions, except Russia and Russian stockpile sales are also expected to fall to 100,000 oz, while supply from recycling is expected to rise by around 200,000 oz.

Investment demand slows

ETF investors' interest in Palladium initially peaked in February 2011, at 2.37 Moz, but after falling over the rest of 2011, they started to climb again in 2012 and went on to peak at 2.43 Moz in May 2013. They have since started to drift lower and were last at 2.19 Moz, so are down around ten percent from their peak. Given the holdings in Gold ETFs have dropped 29.5 percent, the drop in Palladium holdings, at first sight, is not so surprising. However, when you consider Platinum holdings are at record levels and Silver holdings are down less than two percent, it does raise some questions as to why Palladium ETFs have suffered more than Platinum and Silver ETFs. That said, the Platinum holding are up because of the NewPlats ETF in South Africa and without that Platinum holding would be flat. This still, however, means that investors are not as confident holding Palladium as they are Platinum or Silver. Given the deficits in PGMs and the degree to which supply for both metals is heavily dependent on South Africa, we are surprised about the relative weakness in Palladium holdings. With a new South African Palladium ETF set to be launched later this year, the market is braced to see if it attracts as much interest as the Platinum one has. On balance, we would not be surprised to see ETF holdings rebound over the medium term, as we feel the combination of likely supply disruptions, less stockpile sales from Russia and the potential for ongoing recovery in global auto sales, bode well.

Funds

In contrast to the ETF stance on Palladium, compared with Platinum, the funds' trading futures are more bullish for Palladium than they are Platinum. The net long fund position (NLFP) in Palladium has held up at a relatively high level this year and as of mid-November stood at 24,327 contracts, the peak in April was 27,970 contracts. (For Platinum the NLFP is at 32,587 contracts, down from a peak of 50,138 contracts). So whereas the funds are generally bullish on the PGMs, they seem more bullish for Palladium than they are Platinum. Given the fundamentals, this is not surprising. In Platinum's case if it were not for investment buying the market would be in a surplus, whereas in Palladium's case if there was no investment buying, the market would still be in a significant deficit. Needless to say with a larger fund involvement in Palladium this year, compared with previous years, the market is more vulnerable should sentiment change.



Since the start of 2007, the average NLFP has been 11,317 contracts, compared with some 24,000 contracts today.

Technical

All year Palladium prices have oscillated sideways within a triangle, the bottom of the triangle was breached in June, but prices recovered. Interestingly both the top and bottom of the triangle have many points of contact and with prices getting closer to the apex it may well be that a break-out is on the way (the apex is at March 2014). The rising 50 week moving average provides some appearance of upward momentum, although at present the stochastics are looking weak, which ties in with the latest pull back in prices from the top of the triangle. Resistance from the down trend line starts at $760/oz and from previous tops that are staggered between $765/oz to $787/oz. While support from the up trend line is at $700/oz and the major troughs are at: $680/oz, $630/oz, $586 and $555/oz. Over the medium term, we would look for more range trading within the triangle and given the rising moving average we feel on balance here is some upward momentum.

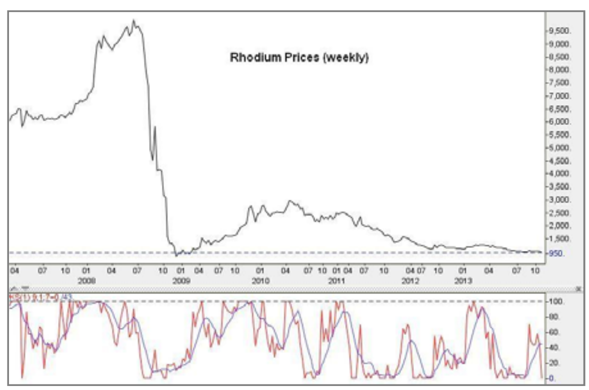
Conclusion and Forecast

The outlook for Palladium looks strong, the metal has a price advantage over Platinum and while that remains the case it means Palladium has potential to win market share from Platinum in the autocatalyst market and to some extent in the jewellery market, although the latter is not happening yet. However, Palladium's supply fundamentals also look bullish. Although supply disruptions in South Africa would affect a greater share of Platinum supply than it would Palladium's, it would still disrupt a meaningful amount of Palladium and the Palladium market is in more of a structural deficit than Platinum, if you exclude investment buying. A rise in Palladium supply is expected in 2014, but it will to some extent be countered by further falls in sales from Russian stockpiles. Reports suggest that these stockpile sales are likely to dry up over the next few years.

Palladium also has the advantage of being the main PGM used in petrol-driven vehicles, which happen to be prevalent in Asia and the US where auto sales growth are expected to remain strong.

Assuming that another crisis in Europe does not develop and the tapering of QE in the US does not inflict too much damage on either the US economy, or the economies of the vulnerable emerging markets, then we feel global growth will gather pace as 2014 unfolds. In turn, that should keep investors interested in Palladium, which should support a bullish bias for prices. Overall, in the medium term we would look for range trading between $680/oz and $760/oz, but for prices to then move up into the higher range that runs up towards $850/oz should there be further supply disruptions in South Africa.

Rhodium Outlook



Rhodium prices have continued to drift lower this year and have failed to get any meaningful lift from the stronger Platinum and Palladium prices. The reason for this is that the spike up in prices in the mid-2000s that ended up with prices reaching $10,000/oz in 2008, meant industry found ways to substitute other materials for Rhodium and as demand dropped stockpiles built up. The market was last in a supply deficit in 2007, although that looks set to change this year, with Johnson Matthey forecasting a deficit of some 14,000 oz this year. The return of a deficit market bodes well for the price down the road, but after five years of supply surplus, Rhodium stocks will need to be worked off before demand is likely to pull prices higher. That said, now that there is a Rhodium ETF, the fact the market is in a deficit and fundamentals are improving may well encourage a pick-up in investor interest.

Demand

With lower Rhodium prices, demand for the metal has returned and it can be seen to be increasing across all of the industries that use it. These include the auto, chemical, glass and electrical industries where Rhodium tends to be used alongside Platinum and Palladium. The auto industry accounts for 80 percent of Rhodium's use, with chemicals using 8 percent, glass 4 percent, the electrical industry 0.5 percent and other industries using around 9 percent. Although the high prices did see demand drop sharply in 2008, demand has recovered and in 2012 stood at 70 percent of what it was in 2007. In recent years, demand has been climbing at a relatively steady pace, increasing seven percent in 2012 and is expected to climb around 4.5 percent this year.

With the market in oversupply in recent years consumers are thought to have been running on a hand-to-mouth basis and given the price performance that is not surprising. Now that a deficit has returned, it will now be interesting to see if industry users start to build inventory for use down the road. Given 57 percent of total supply comes from South Africa we would expect consumers to safeguard their security of supply. After the earthquake and Tsunami in Japan and the floods in Thailand in recent years disrupted the supply chain, we would expect manufacturers to increase the strategic stocks they carry.

The outlook for Rhodium demand in 2014 looks robust as the auto industry looks set for further growth. In addition, after years when loadings per autocatalyst have fallen as technology has improved to give the same performance with less metal per unit (a process referred to as 'thrifting') it does look as though there is little scope for further 'thrifting' and therefore demand should improve in line with auto sales. In addition, we would not be surprised to see some stock building by consumers as they may not want to see investors soak up inventory at these low prices.

Investment interest

The launch of the Rhodium ETF in June 2011 has provided another potential area of demand for the metal and we would expect investment interest to gather pace now that a brighter economic outlook has arrived and as the market has moved back into a small supply deficit. At the end of September 2013, the ETF held 94,000 oz, an increase of 41,000 oz so far this year.

Supply

Rhodium mine output peaked in 2007 at 824,000 oz, it dropped to 695,000 oz in 2008 when power outages in South Africa hit production, but rebounded to 770,000 oz in 2010. Output has since slipped to 720,000 oz, according to Johnson Matthey data.

South Africa is the largest producer, supplying 80 percent of mine supply, or 57 percent of total supply, including supply from recycled material. Output climbed last year, but has been steady in 2013 and given the mining situation in the country output is expected to only increase modestly in 2014, that is if there are no protracted strikes. Russia is the second largest producer, accounting for 12 percent of mine output and 8 percent of total supply. Output in Russia is expected to slip in line with the lower ore grades that are being mined.

Zimbabwe is the third largest producer providing 4.5 percent of mine output and North America produces 3.3 percent.

Looking forward, given our concerns about labour unrest in South Africa we would not be surprised to see supply disruptions in South Africa in 2014 and if these are seen then stockpiles of metal are likely to be drawn down at a faster pace, which will improve the longer term fundamentals.

Rhodium scrap is mainly collected from recycled autocatalysts and the amount of metal from this source is likely to increase as the global vehicle population grows. With Rhodium prices at a relatively low level, the amount of metal being recycled from electronics is low, but we expect that to change once the market moves back into a deficit and as legislation on the recycling of electronic-scrap means more scrap is recycled. Supply from recycled material accounts for 28% of total supply.

Conclusion

The outlook for Rhodium demand is tied in with the global economic outlook and therefore our more positive outlook for growth next year should underpin demand. The combination of low prices, a shift to a supply deficit and potential for labour unrest in South Africa, all suggest that the risk to prices lies on the upside. This is a fact that we feel will not be lost on investors, especially as prices are so depressed. In turn, we feel consumers may also look at restocking if they start to see prices move higher. We envisage prices returning to the $1,000 to $2,000/oz range.

Scotiabank's precious and base metals division, ScotiaMocatta, is a global leader in metals trading, brokerage and finance. Clients can access a full range of financial products and services.
To obtain additional information on our products and services, please contact one of the offices listed below.

CANADA
Toronto
Scotia Plaza
40 King Street West
Box 4085, Station 'A'
Scotia Plaza
Toronto, Ontario
M5W 2X6

Tim Dinneny
Tim.Dinneny@scotiabank.com
Tel: 1-212-225-6200
Fax: 1-212-225-6248

UNITED KINGDOM
London
201 Bishopsgate
6th Floor
London
EC2M 3NS

David Wilkinson
David.Wilkinson@scotiabank.com
Tel: 44-20-7826-5931
Fax: 44-20-7826-5948

UNITED STATES
New York
One Liberty Plaza
165 Broadway
New York, N.Y. 10006

Tim Dinneny
Tim.Dinneny@scotiabank.com
Tel: 1-212-225-6200
Fax: 1-212-225-6248

MEXICO
Mexico City
Blvd. M. Avila Camacho #1, Piso 11
Col. Chapultepec Polanco
Colonia Polanco 11560
Mexico

Jose Maria Tapia
Jose.Tapia@scotiabank.com
Tel: 52 55 9179 5142
Fax: 52 55 5325 3527

INDIA
Mumbai
91, 3rd North Avenue
Maker Maxity
Bandra Kurla Complex
Mumbai 400 051

Rajan Venkatesh
Rajan.Venkatesh@scotiabank.com
Tel: 91-22-6658-6901 (Direct)
Fax: 91-22-6658-6911

New Delhi
Upper Ground Floor
Dr. Gopal Das Bhavan
28 Barakhamba Road
New Delhi 110001

Prem Nath
Prem.Nath@scotiabank.com
Tel: 91-11-2335-8789
Fax: 91-11-2335-9342

Bangalore
25/2 S.N. Towers
M.G. Road
Bangalore 560001

Mahendran Krishnamurthy
Mahendran.Krishnamurthy@scotiabank.com
Tel: 91-80-2532-5325
Fax: 91-80-2558-1435

Coimbatore
Classic Towers
1547 Trichy Road
Coimbatore 641018

Shankara Subramanian
Shankara.Subramanian@scotiabank.com
Tel: 91-422-2304-489
Fax: 91-422-2301-596

HONG KONG SAR
21st Floor, Central Tower
28 Queen's Road Central
Central
Hong Kong

Alice Lam
Alice.Lam@scotiabank.com
Tel: 852-2861-4778
Fax: 852-2573-7869

SINGAPORE
1 Raffles Quay
#20-01, North Tower
One Raffles Quay
Singapore, 048583

Swee Kiang Teo
Sweekiang.Teo@scotiabank.com
Tel: 65-6536-3683
Fax: 65-6534-7825

UNITED ARAB EMIRATES
Dubai
302, Precinct Building 03
Dubai International Financial Cent
Dubai
UAE

Pramod Mohan
Pramod.Mohan@scotiabank.com
Tel: 971 4 371 1555
Fax: 971 4 448 4640

This report has been prepared on behalf of Scotiabank and is not for the use of private individuals. The Scotiabank trademark represents the precious metals business of The Bank of Nova Scotia. The Bank of Nova Scotia, a Canadian chartered bank, is incorporated in Canada with limited liability.

Opinions, estimates and projections contained herein are subject to change without notice. The information and opinions contained herein have been compiled or arrived at from sources believed reliable but no representation or warranty, express or implied, is made as to their accuracy or completeness. Neither the Bank of Nova Scotia, its affiliates, employees or agents accepts any liability whatsoever for any loss arising from the use of this report or its contents. The Bank of Nova Scotia, its affiliates, employees or agents may hold a position in the products contained herein. This report is not a direct offer financial promotion, and is not to be construed as, an offer to sell or solicitation of an offer to buy any products whatsoever.

This market commentary is regarded as a marketing communication. It has not been prepared in accordance with legal requirements designed to promote the independence of investment research and is not subject to any prohibition on dealing ahead of the dissemination of investment research.

The Bank of Nova Scotia is authorised and regulated by the Office of the Superintendent of Financial Institutions Canada. The Bank of Nova Scotia and Scotiabank Europe plc are authorised by the UK Prudential Regulation Authority. The Bank of Nova Scotia is subject to regulation by the UK Financial Conduct Authority and limited regulation by the UK Prudential Regulation Authority. Scotiabank Europe plc is authorised by the UK Prudential Regulation Authority and regulated by the UK Financial Conduct Authority and the UK Prudential Regulation Authority. Details about the extent of The Bank of Nova Scotia's regulation by the UK Prudential Regulation Authority are available from us on request.