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Platinum Market Review

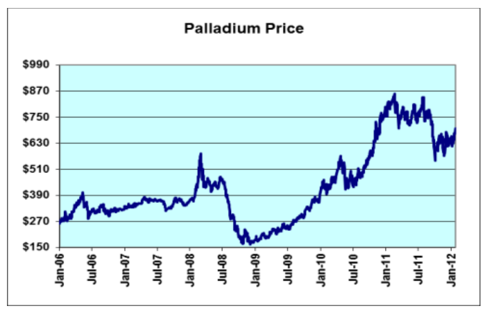
January 2012

Platinum

- **PGM prices fell sharply in final months of 2011 in reaction to growing risk of recession in Europe and consequent depreciation in the value of the euro**
- **Primary metal supplies from South Africa threatened by rising costs and frequent unanticipated safety-related closures**
- **Absent a further weakening in the global economy, platinum prices expected to trend higher on firm demand and recovery in euro**

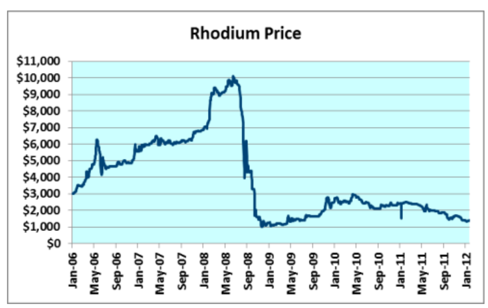
Palladium

- **The markets have re-valued palladium at the expense of platinum and rhodium**
- **Record level vehicle sales and lower primary supply to support higher valuation of palladium**
- **Considerable gains in secondary supply to partially compensate for reduced sales from Russian stocks**
- **Palladium: The new rhodium?**



Rhodium

- **At current prices substitution for rhodium becomes less attractive**
- **Steady gains in global auto sales to benefit rhodium values in future**
- **If the Western economies can maintain nominal growth, the current rhodium price may prove to be at or near its nadir for 2012**



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Market Summary

The market's fears of a possible further retrenchment in economic growth in the advanced economies, specifically in Europe, have kept metal prices on the defensive and limited recoveries from the significant price declines posted in September and again in December of 2011. And at the risk of oversimplifying, metal prices should continue at least over the near-term to be directed by the ebbs and flows in European fiscal progress. In its most current analysis, the IMF has reduced its outlook for global economic expansion to 3.3% in 2012 and 3.9% in 2013, down from earlier projections of 4.0% and 4.5%, respectively, made just three months ago. For the EU nations, the IMF expects the financial crisis to continue with Europe dipping into a mild recession in 2012 (-0.5%) and then recovering with only limited growth in 2013 (+0.8%).

Economic activity in the EU continues to flounder as the ECB and country leaders, most notably from the two largest economies of Germany and France, attempt to halt any further deterioration in the financial and sovereign debt markets of Europe. Standard & Poor's recently downgraded nine member nations stating that current programs "may be insufficient to fully address ongoing systematic stresses in the euro zone". And the implementation of various austerity programs required by the ECB for continuing aid will only lessen economic growth and per capita incomes, and worsen already bleak job markets. In December, unemployment in Spain rose to 23%, 18% in Greece and 14% in Ireland, with overall unemployment for the 27 EU members remaining at a high of 9.8%. Europe's biggest economy, Germany, actually contracted by .25% in the fourth quarter of 2011 and is projected to show only marginal growth in the first three month period of this year of 0.3%. Similarly, the UK reported a 0.2% drop in Q4 growth.

But recent bond auctions in the EU have gone relatively well with yields appearing to have stabilized, for now. This more positive development has been reflected in the current appreciation in the value of the euro which recovered from its recent decline to $1.2625/euro. The IMF also announced earlier this month that it intends on raising an additional $600 billion to be made available to struggling economies, offering the specter of further support. Nevertheless, the EU economy collectively will likely teeter on the brink of recession for much of 2012 and possibly into 2013 with several individual nations such as Greece, Spain and Italy slipping into negative growth for one or more quarters.

Efforts by the Chinese government to rein in the expansion in price inflation, particularly for foodstuffs, by a series of increases in interest rates and bank reserve requirements over the past two years has resulted in a noticeable deceleration in the economy, as evidenced in recent data. Fourth quarter 2011 GDP growth was reported as 8.9%, down from 9.7% in the first period of the year, to its slowest pace in 2 ½ years. The IMF is forecasting a further slowing in 2012 with annual growth of 8.2%. But inflation in the final three months of 2011 fell as intended to 4.1% from a high of 6.5% in July and an average 5.4% rate for the full year. Trade also slackened in December to its lowest growth rate in two years, characterized by a drop in domestic consumption and a falloff in demand from its largest partners, especially in Europe. China's historic trade surplus has also declined significantly over the past couple of years from $296 billion in 2008 to the current $155 billion at year-end. The value of the Chinese yuan which had depreciated 8.1% against the dollar since June of 2010 actually improved marginally in December.

The slowing pace of the economy, in addition to other industry-specific factors, left vehicle sales in China only 2.5% higher for the year, the lowest annual advance in a decade. Nonetheless, car sales will likely break above 19 million units in 2012, a tenfold increase since 2000, and representing the largest vehicle market in the world. Ironically, metal prices have actually firmed on reports of diminishing growth in China, the world's biggest consumer for many commodities, as markets anticipate some measure of central bank intervention to boost liquidity, as seen in a recent 50 basis point cut in bank reserve rates in November.

The US economy has struggled as well but does appear on track to continue with a moderate recovery. Third quarter 2011 GDP growth reached 1.8%, about half of what is considered an adequate expansion rate to support a growing economy. But initial estimates of fourth quarter growth have risen substantially to 3%. The US will also continue to feel the effects of the anticipated periods of flat to possibly negative growth in the EU countries, as an estimated 25% of US corporate profits are derived from European sales. The IMF has forecast a solid 3.3% growth in US GDP for all of 2012, rising again to 3.9% in 2013.

Unemployment totals may now have peaked in the US with the most recent data showing new claims have declined to their lowest level in three years at 352,000 initial claimants in mid-January, down from a high report of 700,000, and approaching the rate of 320,000 new filings on average during the expansion period of 2003 through 2008. The unemployment rate improved with December totals slipping to 8.5%, off from last year's cyclical high of 10.6%. The housing market in the US has also stabilized following its worst correction in decades with home sales in December rising to their highest level in eleven months.

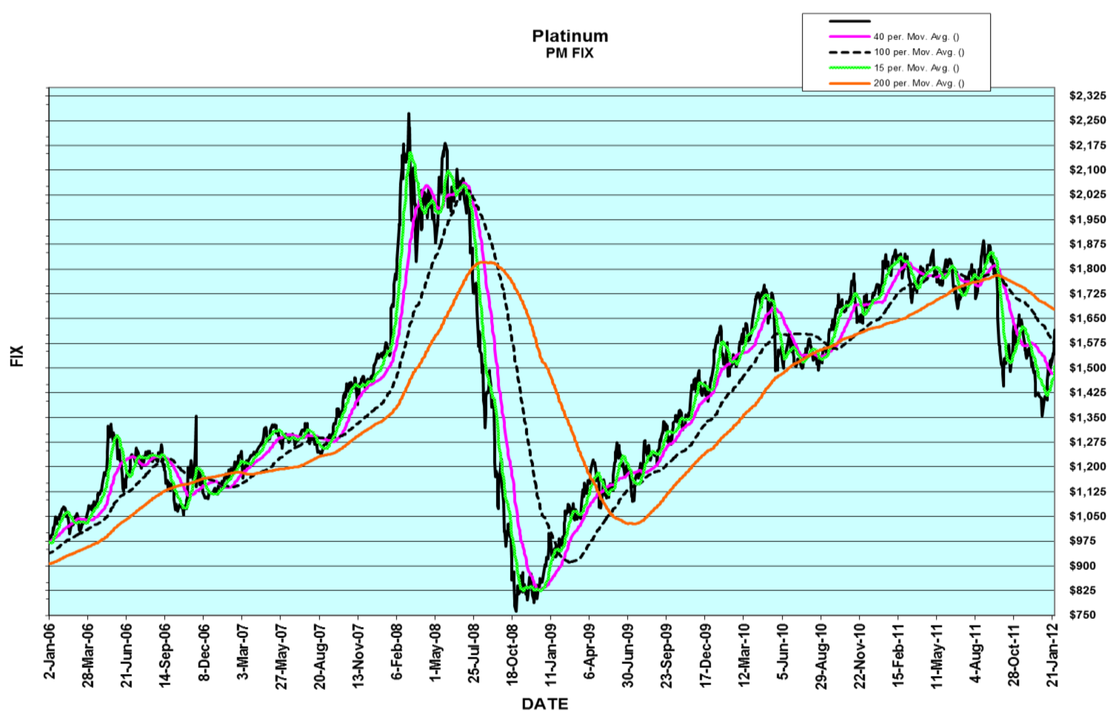
Metal prices will likely continue to battle to move higher in the near-term as the ongoing threat to industrial demand from lackluster global growth has been coupled with a decline in the volume of speculative interest over the past year. But if the EU can manage to avert a broader recession and the US market can continue to expand, albeit modestly, then metal prices may be expected to continue to retrace recent losses as they trend initially back towards last year's averages. Platinum is now trading only 8% below last year's average price of $1,721 an ounce, its highest ever, but nearly 17% from August 2011 highs ($1,912 an ounce), while palladium is just 5% under the record yearly average of $733 an ounce and 20% from its cyclical high value ($859 an ounce) set last February. But given the structural weakness presently in the global economy, and the consequent effect on aggregate demand, values for platinum and palladium in 2012 may not be expected to rise to the level of the cyclical highs recorded last year.

A pattern has developed in the metals markets over the past several years wherein these markets appear to attract fresh investment funds in the early months of the year along with increased interest from commercial counterparts which may have the benefit of new budgets and improving production projections. Platinum prices, for example, have risen by some $250 an ounce from the late-December lows, an 18% gain, while palladium has already increased 15% in value in just the past three weeks. Data from the last several years also suggest that the current uptrend in metal prices could continue through the first half of the year with highs for 2012 likely to be posted in the months ahead. Moreover, in four of the past six years the platinum price actually trailed lower by year-end, as seen in late-2011, after achieving earlier highs.

Platinum

The market's sense of continued uncertainty regarding the eventual outcome of the sovereign debt crisis in Europe has left platinum prices struggling on persistent concerns of a European recession. PGM prices will continue to react to the perceived level of growth or lack of in the global economy. But the downside in the platinum price may be limited by the slowing trend in South African primary production experienced over the past two years, a result of escalating cost pressures and more importantly, the rise in safety-related mine closures. Following any mine fatality, the SA Department of Mineral Resources implements what is termed a Section 54 mine closure for an investigation as to cause and remedy. In October for example, SA platinum production fell precipitously, off by 36% year-on-year as an increase in the number of mining fatalities led to more unanticipated closures and production losses. The platinum mines in SA employed 168,591 workers in 2010, about one-third of the total active across the country's mining sector. It was reported that 32 workers perished in mine-related accidents in the platinum industry in 2010, a 22% decrease from total deaths in the prior year. But that number is expected to increase for 2011.

In addition, the significant cost increases on the mines for labor, equipment and energy have caused several operations to curtail activities or to shut facilities entirely. Employee costs, which comprise roughly 50% of total expenses on the mines, have been escalating at 8-10% per annum in recent years. Anglo shuttered several high cost shafts over the past year, while Aquarius closed Ridge and Impala delayed production at its #20 shaft at Rustenburg and at its Marula mine in response to rising costs. Expansion plans have already been postponed at some mining operations, including those at Crocodile River mines and Platinum Australia.

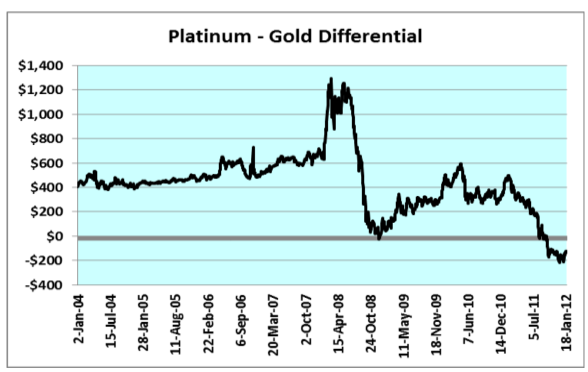


For calendar 2012, supplies of platinum from southern Africa should show little if any improvement as safety-related closures continue to frustrate plans for production growth. Outturn of platinum from South African miners will likely match production of the 5.3 million ounces in 2011, and may at this juncture be expected to increase only marginally in 2013.

The recent appreciation in the price of platinum has been supported by fresh reports from Eskom, the SA power utility company, cautioning customers that the network is "under severe pressure" and to reduce consumption to help avoid the need for load shedding. The company performs the bulk of its maintenance in the SA summer season shutting selected power stations for repairs and curtailing capacity. Eskom has advised customers from time to time on the need for conservation since it first cut deliveries by 5% in January 2008. It was this reduction in electricity deliveries to the mining community that was attributed with spiking platinum prices to all-time highs of over $2,300 an ounce later that year. Inadequate investments in updating and expanding its infrastructure over the past decade have left Eskom struggling to meet its customer requirements with new generating capacity not expected to be brought on stream before 2013. It should be noted, however, that these tight supply conditions have been the norm for much of the past three years, and that a repeat of the early-2008 widespread power reductions has not occurred since then. Eskom also reported that the total volume of electricity delivered to the SA provinces in the first eleven months of 2011 rose by only 0.1% over 2010, with usage in the month of November actually declining by 1.2%, year-on-year.

Another potential threat to South African PGM production was the recent comments from the Deputy Mines Minister of Zimbabwe that the export of platinum concentrates may be banned at some point unless producers can offer a plan for the eventual construction of a refinery operation within the country. At the present time the volumes of concentrates shipped from Zimbabwe to SA refineries would not justify a new major refinery. Whereas the report does not impose any immediate hazard for SA producers here, it is however one more potential obstacle to consider when allocating capital for future development. It was only last year when the government of Zimbabwe issued a ruling that required producers to transfer 51% of equity in local operations to the indigenous population, up from the prior 26% rate.

Speculative positions in platinum on the NYMEX/CME, as measured by total non-commercial and non-reportable holdings, dropped significantly from higher levels at the start of the year of nearly 1.7 million ounces to about 1.1 million ounces of platinum at year-end. In contrast, ETF holdings in platinum saw an 11% increase in 2011, finishing the year with 1.4 million ounces held on behalf of investors.

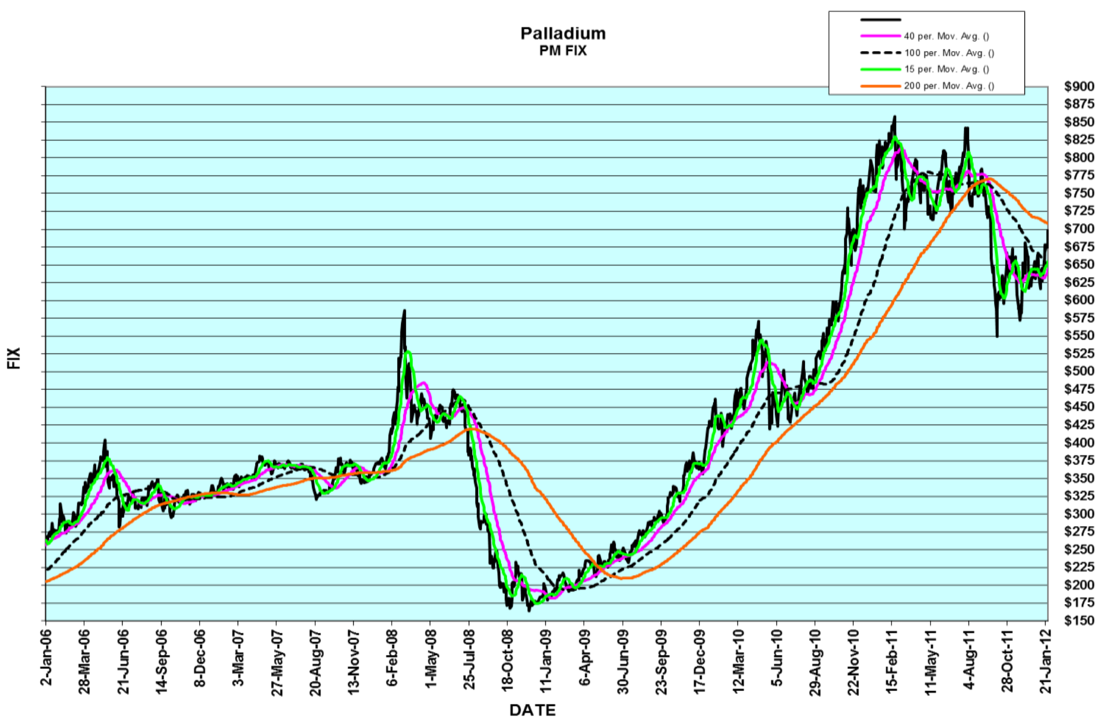


If the advanced economies can manage to collectively maintain even minimal growth in 2012, with the European nations implementing a viable plan avoiding further fiscal deterioration, and global vehicles sales can eke out another year of gains as projected, platinum prices could continue to firm at least through the first half of the year. There has also been evidence in recent weeks that investors have begun to buy platinum and sell gold in expectation of a correction in the historically low ratio. With the flow of fresh investment dollars and a somewhat positive view of the US and Chinese markets, platinum could rise back to values last seen in the third quarter of 2011 of $1,750 to $1,800 an ounce.

Palladium

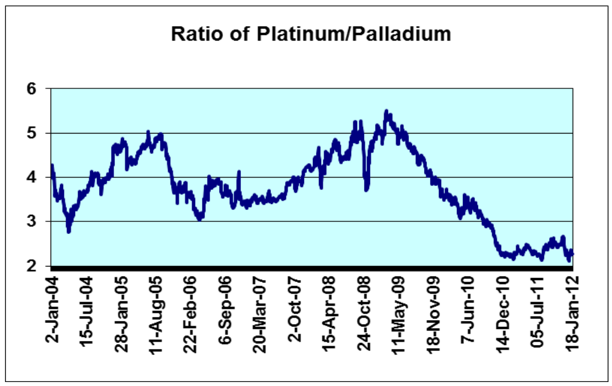
At its current price, palladium has more than quadrupled in value during the present expansion period from a low of $157 an ounce in December 2008, but has eased from its earlier February 2011 high of $859 an ounce, which at that time represented an impressive 447% appreciation. Admittedly, the record volumes of speculative investments over these past few years had acted to extend the rally in palladium prices beyond its underlying value. Funds correctly increased investments in palladium on an anticipated hike in demand for metal linked to a recovery in vehicle sales and on expectations of a reduction in supplies of the metal delivered from Russian stocks at Gokhran, the state metal repository.

Norilsk had stated that the Russian stockpile held by Gokhran was nearly depleted and that the annual sales of palladium of as much as 1.76 million ounces in recent years will now fall to perhaps only 150,000 ounces from this year. It can be posited that in large part it was the expectation of this reduction in supplies of the metal delivered from Gokhran that drove the price of palladium up sharply from its 2008 lows. Separately, Norilsk recently cautioned that its primary production of metals, including palladium, would see a “slight reduction” in 2012.



Given the growth in worldwide auto sales, which account for more than half of annual palladium demand, consumption of palladium for this sector should continue to be steady and at higher demand levels historically. Global vehicle sales are projected to rise to 77 million this year from an estimated 72 million cars sold in 2011. The most pronounced growth in vehicle sales has been recorded in China where the total number of vehicles sold in 2011 rose to 18.5 million units, up sharply from 7.2 million just five years ago and only 2.3 million in 2001. Strong sales also continued in the US with 12.74 vehicles sold last year. Both growth markets are characterized by greater loadings of palladium to platinum in the manufacture of catalytic converters in an approximate ratio of 4 to 1.

The speculative interest in palladium that had grown substantially since the trough of this price cycle in 2008 has eroded somewhat over the past year as funds have lightened positions as the perceived balance of reward to risk has diminished. Non-commercial and non-reportable positions held on the CME/NYMEX have fallen from about 1.7 million ounces at the start of last year to the present 533,900 ounces, while ETF holdings declined by 23% during this period to 1.7 million ounces.



The moderation in the growth expectations for palladium is and will likely continue to be a disincentive for the return to levels of speculative participation experienced in the period from late-2008 through early-2011. Nevertheless, palladium prices remain relatively strong compared to platinum: At the peak of the last expansion period in early 2008, the platinum/palladium ratio was trading at just under 4 times while at present the ratio has fallen to 2.25 times. The markets have re-valued palladium over the past three years and will likely continue to do so for the two primary reasons discussed. Firstly, the demand for palladium from the automotive sector for use in catalytic converters has been on the rise at the expense of platinum and rhodium. And secondly, supply expectations for 2012 onward have been adjusted downward on the assumed depletion of Russian state stocks, bolstering palladium's appeal for investors.

If the EU countries, with the exception of a few heavily indebted nations, and the US maintain positive economic growth, albeit minimal, and car sales continue to improve, even marginally, then palladium prices may be expected to retrace the decline of the past four months rising to perhaps $775 to $825 an ounce later in the first half.

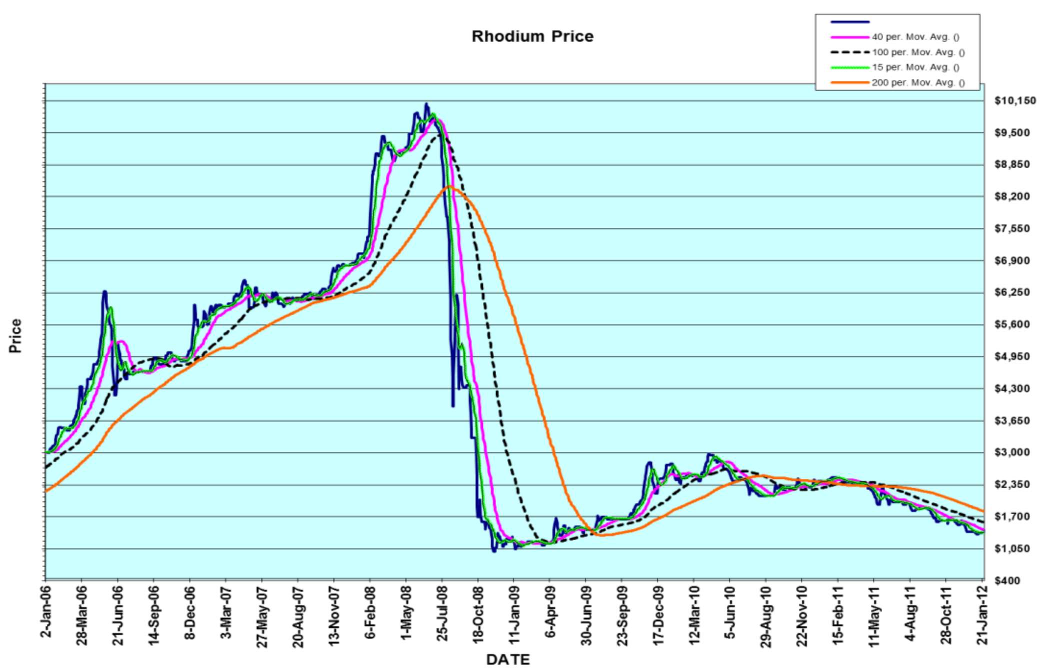
However, one very large caveat would be if the European financial situation should deteriorate further, then commodity prices may be expected to slip again on a probable easing in global economic growth, with palladium possibly re-testing recent lows of $535 an ounce. Nevertheless, any declines in palladium may be limited relative to platinum.

Rhodium

Rhodium values continue to suffer from limited interest from both consumers and investors, and with prices further affected by the disinvestment in other commodities, particularly platinum and palladium, which occurred towards the latter months of 2011. After losing more than 90% of its value in the global market collapse in 2008, rhodium prices briefly recovered to a high of near-$3,000 an ounce by mid-2010 before commencing a gradual descent to current levels. And given the evolving financial difficulties impacting the European economy and the potential for a further depreciation in those markets yet to be recorded in 2012, there is still a possibility that the price of rhodium could drift lower, perhaps even down to the trough of 2008 of just below $1,000 an ounce.

However, current market values for rhodium should make the metal more attractive to commercial users than it has probably been for several years, possibly limiting price declines from present levels. And if the advanced economies can manage to avoid slipping into a new recession and continue to expand even marginally, current rhodium prices may prove to be at their lowest value for 2012.

The significant appreciation in the price of rhodium, particularly in the two-year period from early-2006 through mid-2008 when the metal topped $10,000 an ounce, resulted in a greater intensity in thrifting efforts by car manufacturers to reduce loadings of the higher priced PGM. Rhodium prices during this period were running at a 15 to 20 multiple to that of palladium, and at a rate of 4 to 5 times that of platinum. Presently, however, rhodium prices have actually fallen to barely twice that of palladium and to a discount to the price of platinum. As a consequence, the urgency to “engineer-out” the need for rhodium may have now peaked.



Earlier industry initiatives to lessen rhodium's dominant role in controlling nitrogen oxide emissions by substituting increased loadings of palladium have now become uneconomical as well. It is estimated that NOx can be removed from car exhausts as efficiently by replacing each ounce of rhodium with 5 to 7 ounces of palladium, a feasible solution just two years ago which has now become prohibitively expensive. Additionally, the move to substitute a greater mix of platinum for then higher priced rhodium in glass making equipment such as thermocouples and crucibles will likely also be reversed given current valuations.

The need for rhodium in the production of glass, where the metal is used in manufacturing equipment because of its tolerance to high temperatures, has moderated in recent months. Corning, the world's largest producer of specialty glass products, reports an expected further decline in the sale and manufacturing of flat glass as the growth in sales of televisions has stalled. In addition, Corning was projecting as much as a 25% drop in the sale of its Gorilla glass, quarter-on-quarter, due to a similar decrease in the demand of computer tablets and a slower rate of sales in smartphones. However, reports of sharp increases in the sale of tablets and e-readers over the holiday period may have cushioned the decline in final quarter sales. Nevertheless, Corning plans on cutting production capacity of flat glass in the months ahead.

But perhaps most importantly for rhodium demand, vehicle sales remain firm worldwide particularly in the US and China with domestic sales in Japan slowly improving to pre-March levels, and with European sales that are essentially flat to those of last year. It is estimated that more than 80% of annual rhodium production is consumed by the automotive sector for emission controls. Any further gains in global vehicle sales can only bolster rhodium requirements and in turn values.

PGM Demand

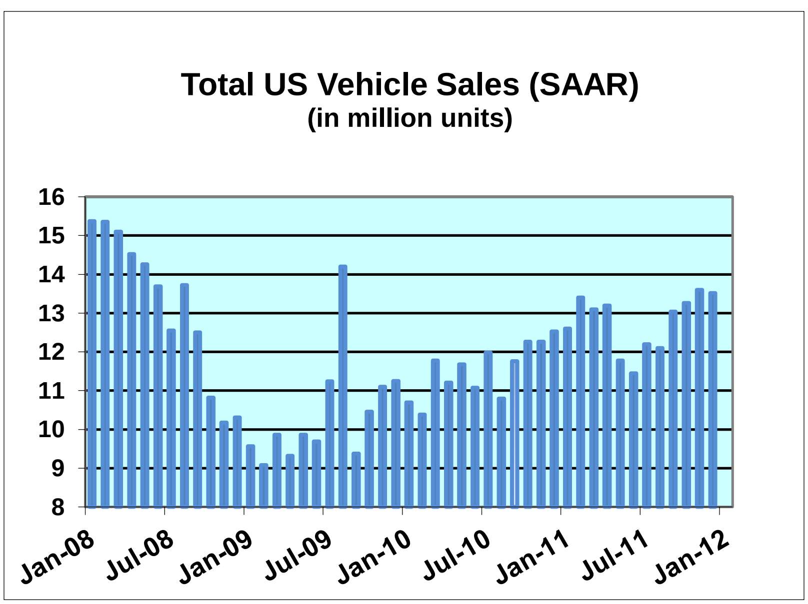
Automotive Catalyst Demand

Global vehicle sales rose by nearly a third since 2008 as the world economy resumed its growth trajectory, with an estimated 72 million cars likely sold in 2011 and projected to rise to 77 million this year, according to industry consultant J.D. Power.

US car sales displayed considerable strength in calendar 2011 as consumers continued to return to showrooms, rising 10.2% for a total of 12.74 million units, up from 11.55 million in the previous year. Vehicle sales in the final months of the year remained above average with December sales of 1.24 million units, 8.9% above comparable 2010 figures, representing a seasonally adjusted rate of 13.56 million. Lower borrowing costs and more attractive leasing terms helped bolster sales. In addition, gas prices in the US have been steady in recent months and consistently below the $4 mark owing to adequate gasoline supplies on hand which has also helped to keep sales firm.

Chrysler's 2011 results were dramatically higher, up by 26.1% in 2011when compared to the same period in 2010, while GM (+13.2%) and Ford (+10.8%) also reported strong gains for the year. For the Japanese manufacturers, only Nissan posted higher sales, up 14.7%, as the devastating tsunami in March and the more recent supply constraints associated with the widespread flooding in Thailand limited sales at both Toyota (-6.7%) and Honda (-6.8%).

Industry projections for 2012 assume that the recent positive trends in US car sales will be sustained with a possible rise in total vehicle sales to 13.5 or even 14 million this year, a 6-10% improvement. As the chart below illustrates, the current pace of monthly vehicle sales in the US, with the exception of the one-month cash-for-clunkers program in August 2009, is now at its highest level since the previous expansion period which ended in 2008.



EU registrations declined marginally in 2011, off by 1.7% from the same period of 2010, for a total of 13.34 million units. Of the five largest European markets, accounting for 76% of total EU sales, only Germany posted growth, 8.8% in the period from January through December, with losses recorded in Spain (-17.7%), Italy (-10.9%), the UK (-4.4%) and France (-2.1%). New car registrations in the EU for the month of December fell 6.4% from the comparable 2010 period to 953,108 units, and 5% lower than that of November. The financial crisis across Europe will make any meaningful gains in car sales from current levels difficult to achieve in 2012.

Japanese domestic sales of passenger cars, including mini's and commercial vehicles fell 15% in 2011 to 4.21 million; passenger car sales excluding mini's declined 16.7% last year to 2.69 million, the lowest in four decades. The decrease in sales was a reflection of the sharp drop off in buying interest and production following the disaster in March and the later large-scale flooding in Thailand that affected the supply of necessary parts. However, the sale of passenger cars, excluding mini's, jumped 23.5% in December for a fourth straight monthly increase, as a recovery in production is supported by government tax incentives for fuel efficient cars and more recently for clean vehicles. Manufacturers hope that the sales improvements recorded in the last quarter can carry into the new year and trend back towards 2010 passenger car sales levels, excluding mini's, of 3.2 million cars.

Chinese vehicle sales are estimated to have risen 2.4% in calendar 2011 to 18.5 million vehicles after climbing 32% in 2010 to 18.06 million. Sales of passenger cars only were reportedly up by 5.2% for the year to 14.5 million units. An increase in the preferential sales tax for smaller vehicles due from buyers and the end to other incentives for purchases, which were phased-out at the start of last year, in addition to restrictive sales quotas set in Beijing and other cities and a slowing in the overall economy, have collectively impacted sales in 2011. Sales for this year are projected to grow by 5-10% which could see total vehicle sales topping 20 million units, up nearly tenfold over the past decade.

In India, passenger car sales are expected to be flat to only marginally better in the current fiscal year ending in March 2012, in line with 2011 sales of 2.5 million units. India in fact sold a total of 15.5 million vehicles in the fiscal year ending March 2011 of which 11.8 million were motorbikes. Slower passenger car sales in India thus far in fiscal 2012 have been attributed to a combination of rising interest rates and fuel costs. The anticipation of an interest rate incentive from the government for new buyers has led industry consultants to raise projections for new car sales by 11-13% for the twelve months ending March 2013.

For Brazil, the world's fourth largest sales market following China, the US and Japan, sales rose 3.4% in 2011 to 3.63 million cars, up from 3.51 million last year, for its fifth consecutive annual increase. Russian car sales are also expected to post sharp gains for calendar 2011 with total sales of 2.6 million, a 37% increase year-on-year. A further gain to 2.8 million cars is anticipated for 2012.

Jewelry Demand

Offtake of platinum for jewelry applications may be expected to show only modest growth in 2012 over that of last year, but will still fall well-below recent record demand of 2009. The sizable increases in platinum for jewelry consumption in 2009 were largely a function of industry re-stocking following the global recessionary period of 2008. Last year's platinum demand of some 2.2 million ounces was limited by higher average prices for the metal and substantial recycling due to cyclical high values and the de-stocking in Japan resulting from the financial effects of the tsunami of last March. Platinum jewelry demand may see only a 5-10% recovery this year as the economic uncertainties in the advanced markets of Europe and the US act to suppress interest in jewelry purchases, while China, whose economy is also slowing, may show some small increase in buying. China already represents about two-thirds of total world consumption of platinum for jewelry applications.

The marked depreciation in the value of the PGMs since September of last year could also encourage a period of fresh buying interest in platinum jewelry. At current levels, the platinum price is down 10% from its 2011 average of $1,720 an ounce, and nearly 20% below last year's high. Moreover, present market values with platinum trading at a discount to that of gold, an event which has rarely occurred over the past 30 years, could promote an increased usage of platinum in jewelry as the metal has long been perceived as "more valuable" than gold.

Chinese interest in palladium jewelry may have peaked as demand over the past several years has been in steady decline. The palladium jewelry market has ostensibly been defined by Chinese consumers who, like in the platinum jewelry sector, have accounted for the majority share of metal for this application each year. Jewelry demand for palladium, which topped one million ounces in 2008, will likely absorb only half that amount in 2012. Higher current prices for palladium relative to those of platinum were likely a contributing factor in this change in consumer preferences.

PGM Supply

South African Production

Anglo American Platinum posted an 8.3% decrease in platinum production from its own mines in the December period, year-on-year, to 453,300 ounces as compared to 494,100 ounces in 2010, and 11.8% below the 513,700 ounces outturned in September. Total refined platinum ounces which include refined metal from joint venture and associate partners also fell in the December quarter to 710,000 ounces, from 646,500 ounces in September, and 872,400 ounces a year ago. Most underground operations were again hampered by an increase in the occurrence of safety-related Section 54 stoppages.

As a result, production from open pit operations, particularly at Mogalakwena, was again raised to compensate for tonnage lost from underground. A better-than-expected contribution from the developing Unki mine also helped production. Unki reached its planned output for the first phase of mining with steady state production of 120,000 ounces of PGMs per annum.

Anglo produced a total of 2.53 million ounces of refined platinum in its fiscal year ending December, with platinum sales for the period likely to match management’s earlier projections for a total of 2.6 million refined ounces of platinum.

Impala reported only a marginal decline in platinum production at its Rustenburg lease area in the first quarter of fiscal 2012 to 249,000 ounces, 0.8% below the 251,000 ounces outturned in the same period of 2010. Production for the period remained stable despite a 5.5% drop in tonnage and a loss of some 8,000 ounces of platinum due to Section 54 closures during the quarter. In addition, the earlier decision to delay its first year production of 26,000 ounces of platinum at its new 20 Shaft until 2013 also impacted results. Shaft 20 is scheduled to reach steady state status with 150,000 ounces of platinum by 2017. Shafts 16 and 17 should add an additional 180,000 ounces of platinum each, reaching full production in 2019 and 2023, respectively. Management cautioned that additional safety-related closures in the start of the second quarter could have a similar effect on December production results. A return to earlier production levels at Rustenburg of 1.1 million ounces or more of platinum may not be expected until the second half of fiscal 2012 with a further ramp up in reef development efforts.

Production at Impala’s 86.7%-owned Zimplats rose to 45,000 ounces in platinum concentrates for the period, a small improvement of 2.3% over the same time last year (44,000 ounces), as the mine has now achieved its steady state Phase 1 expansion plan. The Phase 2 project which has already commenced could raise annual platinum outturn to 270,000 ounces by 2014. 50%-owned Mimosa reported production of 27,000 ounces of platinum in the September quarter as the mine has also reached steady state status. At the 77.5%-owned Marula, platinum output slid 10% to 18,000 ounces in the first period due to a re-structuring of the mining operation. The mine had targeted increases to 100,000 ounces of platinum at full production later this year, but it has now been decided to maintain current output levels for two more years as management amends its mining plan.

Impala's gross platinum production, which includes outturn from its own lease area, joint venture operations and toll refining, decreased by 12% in the first quarter to 388,000 ounces primarily because of lower volumes from third party tolling. Management has set a target of 2 million gross ounces of platinum by 2014 as contributions from new shafts come on stream.

Platinum concentrates produced at Lonmin in its fiscal year ending September were in line with that of 2010 at 719,000 ounces of platinum despite a number of Section 54 work stoppages and a total of ten lost days due to an illegal strike at Karee mine, the largest contributing operation which accounts for more than a third of the company's outturn. Overall tonnage at Lonmin rose 3.7% during fiscal 2011 while grades fell 5.4% from dilution from higher development activity, poor ground conditions and overall lower yields. Improved production levels were achieved at Karee and also at its ramp-up operations at Saffy and Hossy mines. Increasing contributions from these latter properties and initial production from its new K4 shaft in 2012 will boost production at Lonmin to a planned 950,000 ounces by 2013.

In its first quarterly results ending in December 2011, Lonmin reported total platinum concentrates of 186,725 ounces, a 3.5% increase over the same period last year, despite a record number of lost days due to Section 54 closures. Management at Lonmin has maintained projected sales of 750,000 ounces of platinum in its fiscal year ending September 2012.

Aquarius Platinum announced its results for the first quarter of fiscal 2012 with total attributable production of 109,828 ounces of PGMs, down again from 114,260 ounces in the June period and 122,213 ounces of PGMs in March. The implementation of a new hanging wall support system at Kroondal and Marikana and resulting reduced availability of working faces and lower grades during the period were ascribed as causes for continued lower output at both mines in September. Kroondal posted only a marginal 0.3% decline over the June quarter to 44,454 attributable ounces, but fell by a much larger 19.6% from year ago levels. Marikana reported improved production up to 12,996 attributable ounces of PGMs in September, up 21.4% from a particularly poor June period on an 18% hike in tonnage from underground but still down 6.4% from outturn of June 2010.

Wholly-owned Everest continued to be impacted by poor ground conditions and Section 54 stoppages which resulted in an 11% drop in throughput in the quarter and a consequent 14.6% decline in PGM production to 23,074 ounces in September, q/q, but rose 13% from the comparable period of 2010. A protected strike action on a right to organize the present workforce at the start of the current quarter will likely further affect production in the three months to December.

Everest is scheduled to reach steady state status of 200,000 ounces in 2013 and beyond. Mining of the new contiguous property at the Booysendal South section recently purchased from Northam would not likely begin before 2013, with first outturn possible in 2016. Booysendal South could raise Everest's output to 250,000 ounces of PGMs by 2017/18. Mimosa produced 26,899 attributable ounces in the first quarter, at its steady state status of 100,000 attributable ounces of PGMs annually, and in line with previous periods. For fiscal 2011, Aquarius produced 487,404 attributable ounces of PGMs, below management's earlier goal of 530,000 ounces of PGMs but better than the 422,619 ounces of PGMs outturned in 2010.

Xstrata reported a 16% decrease in platinum production from its South African operations in its third quarter, with outturn of 24,794 ounces of platinum versus 29,520 ounces in the comparable 2010 period. In its first nine months, platinum outturn from Xstrata's South African holdings has dropped 19.2% to 75,471 ounces (93,457 ounces in 2010). Mostly all of the decline in output in this period has been ascribed to problems at its wholly-owned Eland's mine which included earlier difficulties gaining government approval to extend mining of the open pit operation and the subsequent processing of lower grade oxidized ore which further reduced throughput for the period. As a consequence, management decided in August to shut the open pit operation at Elands, but to continue development of the underground operation. The plan is for the sinking of two new decline shafts at Elands that could contribute upwards of 150,000 ounces of platinum by the end of 2013, and reaching targeted output of 300,000 ounces of platinum by late-2015.

The contribution from the 50%-owned operation at Mototolo, a joint venture with Anglo Platinum, was some 13,000 attributable ounces of platinum in the third quarter, with the balance of 11,760 ounces derived from Elands during the period. Mototolo is now producing at its steady state level of 200,000 ounces of total PGMs annually.

In addition, Xstrata produces PGMs as a by-product of its nickel mining from its Sudbury operations. Xstrata doesn't disclose actual PGM totals from Sudbury production but did report an increase in third quarter production of nickel concentrates from its Sudbury and Raglan operations. Estimates place PGM outturn at 150,000 ounces of palladium and 95,000 ounces of platinum, not including toll refining on behalf of North American Palladium.

Production at Northam fell 22.2% in its fiscal year ending in June to 250,110 ounces of PGM concentrates from 321,475 ounces in the prior year as a six-week strike action over a new wage contract and a number of safety stoppages predominantly in the first half affected outturn at its Zondereinde mine. Throughput at Northam declined by 21.9% as a result of the labor disruptions while grade levels also slipped by 5.8% for the year. The company lost 22% of its operating shifts for the entire year at the mine.

The construction at the company's Booysendal North property on the eastern limb of the Bushveld Complex is progressing with first production scheduled for the third quarter of 2013. It was announced earlier that the planned outturn at Booysendal would be 162,000 ounces of PGMs annually at steady state but probably not before 2015. The mineral rights to the southern portion of Booysendal adjacent to the Everest mine have been sold to Aquarius. Management has cautioned that the recovery in production from the Zondereinde mine will be hampered by continuing geological problems and the 34% decrease in underground stope development during this past year.

September quarterly results for Eastern Platinum showed a marked improvement with a 31.3% rise in output to 26,955 ounces of PGMs from 20,528 ounces in the prior June period which was marred by an unprotected strike action in May that included damage to property and equipment. Production at its Crocodile River Mine was, however, still well-below the 37,798 ounces of PGMs reported in the comparable period of 2010. Management stated that the replacement of suspended workers has been slower than anticipated but that production would continue to build into the fourth quarter and beyond. Targeted production for fiscal 2011 was lowered to 105,000 ounces of PGMs, considerably lower than earlier projections of 150,000 ounces of PGMs for the year.

The re-start of operations at Crocette, an area adjacent to the larger Zandfontein mine which had been placed on care and maintenance in 2008 because of falling metal prices, is scheduled for 2013. The combined mining operation could raise outturn at Crocodile River in excess of 200,000 ounces of PGMs. Also, construction at its 75.5%-owned Mareesburg open pit mine on the eastern limb of the Bushveld has commenced with projected outturn of 115,000 ounces of PGMs set for initial mining in late-2012. Eastern Platinum's other prospects at its Spitzkop mine, slated to replace the open pit operation at Mareesburg, and at its De Goedegevagting and Kennedy's Vale properties will be re-visited in 2012. Management has estimated that these latter properties could add a total of 400,000 ounces to East Plats' production if and when brought to production.

Anooraq Resources announced its results for the third quarter ending September 2011 at its Brakfontein mine at Bokoni with PGM production of 33,358 ounces, 18.6% above the previous quarterly output of 28,119 ounces, and 8% higher than the same period of 2010 of 30,877 ounces. Management reported that production was affected by a loss of six full shifts for Section 54 safety inspections and an increased incidence of ground problems on the Merensky reef during the quarter. Throughput totals jumped 13.5% in September, quarter-on-quarter, 19.8% above that of the comparable 2010 period. It was also noted that reef development during the September quarter improved considerably (+24%) which bodes well for subsequent periods.

Production from the Brakfontein mine appears back on track to achieve its earlier target of 120,000 ounces of PGMs plus gold per annum, with plans for up to 240,000 ounces of PGMs annually by 2014. A recapitalization and refinancing plan for the mining operation at Bokoni is currently being negotiated between Anooraq and Anglo Platinum, a 49% partner in the mine, which will likely be announced in the final quarter.

South African miner Platmin produced 10,276 ounces of PGMs plus gold in its third quarter ending September, down nearly 40% from the same period in 2010. The loss in production at its Tuschenkomst open pit operation of its Pilanesberg Platinum Mine on the Western Limb was ascribed to an unauthorized work stoppage that began in June and continued through most of July that was accompanied by acts of vandalism to property and equipment. The company sold 13,640 ounces of PGMs in the September period with the additional 3,364 ounces presumably taken from stocks. For the first nine months of 2011, Platmin had output of 47,622 ounces of PGMs, 12.6% above that of last year.

Management has maintained its earlier monthly target of 12,000 ounces of PGMs plus gold, or approximately 140,000 ounces per annum by mid-2012. Management envisions the mine rising to steady state production of 250,000 ounces in 2013. In addition, a detailed study of the Sedibelo West property, contiguous to the existing Tuschenkomst open pit operation, is anticipated later in the first quarter of 2012. Platmin's 10% ownership of Sedibelo West is projected to extend the current mine life and to add to production totals.

Platinum Australia announced its production results for its September quarter with 9,021 ounces of PGMs plus gold for a 2.5% improvement over the 8,799 ounces in June. The three month period was again affected by employee actions and a number of Section 54 work stoppages. Management cited a total of 14 production days lost, or some 20% of available shifts in the quarter. Despite a slight decline in head grade and a marginal decrease in tonnage from underground during the quarter, a marked increase in plant recovery rates acted to boost production. Previously, management had projected that production would continue to recover from current levels of approximately 35,000 tons per month to 60,000 tons of throughput per month, reaching production of 15,000 ounces of PGMs plus gold later this year and then rising to steady state status of 22,000 ounces of PGMs quarterly presumably in 2012.

A decision on whether to proceed with the company's Rooderand Platinum Project on the western limb of the Bushveld Complex will likely not be decided until the March 2012 quarter. Rooderand is envisioned as an initial open pit operation of potentially 8-10 years, moving underground thereafter for a further 8 years, with anticipated production of 115,000 ounces of PGMs annually. In addition, a pilot program is underway at the company's Kalahari Platinum Project in the North West province of South Africa which could potentially add a further 105,000 ounces of PGMs per annum over a nine year life from the open pit mining of seven deposits.

Russian and North American Production

Palladium production at Norilsk in the third quarter was 677,000 ounces, down 9% from previous period totals of 744,000 ounces, which in turn had been up 9.3% from the March period. Management stated that the current quarterly results were more in line with planned production while June figures reflected an "overproduction" in the period. Platinum production displayed a similar pattern, with output down 10% in September to 171,000 ounces from 190,000 ounces previously (170,000 ounces in the June period).

Virtually all of Norilsk's PGM production is sourced from the company's nickel operations at its Kola mines on the Kola Peninsula in western Russia and from the larger Polar division on the Taimyr Peninsula in central Russia in the Arctic Circle. Nickel production rose sharply in the September quarter, up 23% q/q, due to the seasonal ice melt in shipping channels, but PGM outturn actually slumped. It is likely that the substantially higher prices for the metals in the first half of the year prompted greater sales in the second quarter.

For the first nine months of 2011, palladium production at Norilsk was reported as 2.1 million ounces, off by 5.1% from the comparable period of last year, and platinum at 531,000 ounces, in line with previous totals. Norilsk appears on pace, nevertheless, to match management's earlier projections for palladium output of 2.85-2.87 million ounces and platinum production to 705-720,000 this year. In 2010, Norilsk recorded total output of 2.861 million ounces of palladium and 693,000 ounces of platinum. Management recently cautioned that metal outturn in fiscal 2012 could be slightly below sales in 2011. No production guidance has yet been offered.

PGM production fell dramatically at Vale in its third quarter as a consequence of the effects of the closure of the #2 furnace at Sudbury's Copper Cliff smelter due to an explosion in February.

Palladium output was down by 44.8% to 40,000 ounces from 72,000 ounces in the June period as concentrate feed to the Acton refinery was significantly reduced. Platinum production dropped by a similar 49.8% in September, q/q, to 25,000 ounces. PGM production at Vale is mined as a co-product of the company's Sudbury nickel operations, which only re-commenced operations in September of 2010 following a protracted labor strike that lasted nearly a year.

For the nine months through September, PGM production at Vale is 317,000 ounces (184,000 ounces of palladium and 133,000 ounces of platinum), seemingly still on track to meet its production levels in its last full year of production in 2008 of 411,000 ounces of PGMs which included 238,000 ounces of palladium and 173,000 ounces of platinum. Fourth quarter outturn of PGMs should be up sharply from the September period given the build-up of material at the smelter from the second quarter and the subsequent refining of delayed feed and the likely rise in PGMs at Sudbury where nickel production rose 52.7% in the third quarter to 16,000 tons.

Stillwater Mining reported a 6.2% increase in its third quarter PGM production to 130,000 ounces compared to 122,400 ounces in the same period of 2010, but was lower by some 8.9% from the 142,700 ounces of PGMs in the June 2011 period. Production increases for the quarter were again ascribed to improved levels in underground tonnage and rising ore grades from the eastern section of the Stillwater Mine where production rose 8% over that of last year. East Boulder mine saw only marginal increases in the September quarter, y/y. The company outturned 100,000 ounces of palladium and 30,000 ounces of platinum during the third quarter. For the first nine month period Stillwater has produced 404,000 ounces of PGMs, 11% above the same period of 2010, and appears on track to meet or likely surpass guidance of 515,000 ounces for the full year.

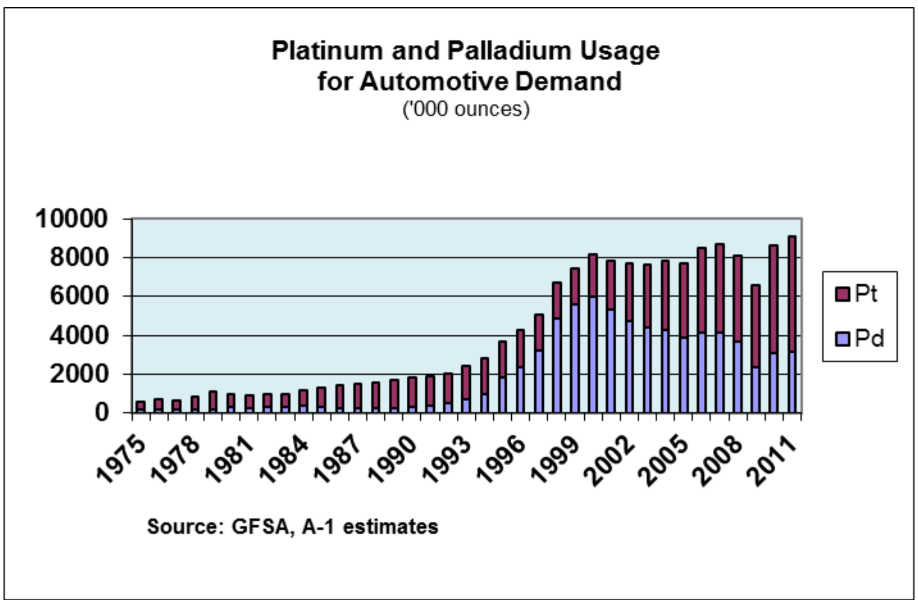
Stillwater's recycling operation also continues to perform well, with 374,300 ounces of PGMs processed at its smelter in the first nine months, 26% above the 297,000 ounces outturned in the comparable 2010 period. The company purchases and recycles autocatalyst and oil catalyst scrap for its own account and toll refines on behalf of third parties at its Columbus, Montana smelting and refining complex.

Third quarter production at North American Palladium's Lac des Iles mine in north Ontario fell 25.8% from the previous period with output of 34,871 ounces of palladium, down from 46,971 ounces in June. Tonnage rose sharply in the September period (+11.5%), but because of the inclusion of an increasing amount of ore from surface stocks the average grade dropped more than 30%, thus impacting outturn. In the first nine months of 2011, NAP produced 112,503 ounces of palladium, in line with revised guidance for 2012 of 150,000 to 160,000 ounces of palladium. The company also produced 11,496 ounces of gold in the first nine months from its Sleeping Giant mine in Quebec that was acquired in 2009. It was recently announced, however, that operations at Sleeping Giant will now cease production.

The completion of Phase I expansion scheme, with a new shaft system to access ore from the Offset Zone, an area adjacent to the existing Roby Zone, is scheduled for late-2012. Deeper access to the Offset Zone and existing Roby Zone in Phase II is expected to potentially increase output at NAP by up to 250,000 ounces of palladium per year by 2015, and extend the life of the mine by 7 to 10 years. NAP is investigating three additional areas of mineralization contiguous to the Offset Zone which could also contribute to production beyond 2013.

Secondary Supply

The catalytic converter has been required on all US autos since the 1975 model-year, which began manufacture in 1974, following the passage of the Clean Air Act of 1970. Similar legislation was also enacted in Japan in 1975, while converters were first mandated in the EU markets in 1992 and elsewhere beginning in the early to mid-nineties. Nearly all developed countries and most developing nations have now adopted some form of anti-pollution legislation that requires the use of catalytic converters. Euro 3 and Euro 4 regulations, or comparable surrogates, are the most commonly implemented programs in the developing markets. Since 1974, it has been estimated that more than 140 million ounces of platinum and palladium have been consumed globally in the manufacture of the automotive converter. Currently, some 9 million ounces of both platinum and palladium, about two-thirds of total new primary supplies of the metals, are used in pollution control applications each year.



Major producing nations, including the US, Japan and the EU countries, have already enacted legislation that mandate the proper salvage procedures for End-of-Life Vehicles (ELV) that ensure that most of the vehicle's parts can be recycled. EU regulations, for example, now require that 85% of the value of an ELV be recycled, up from prior levels of 55-65%, and for a further rise to a level of 95% of a vehicle's value by 2015. Producer responsibility regulations mandate that auto manufacturers establish collection networks to take back ELV's from the last registered owner of a vehicle at no cost and to dispose of the vehicle in an environmentally-responsible manner; the last owner of the vehicle can still opt to sell to the local salvage yard if some compensation is offered. Most worldwide initiatives outline a strategy that would enable the recycling industry to achieve a 95% reclamation rate for the value of an end-of-life vehicle, specifically requiring the removal of the autocatalyst during the treatment process, by the year 2020.

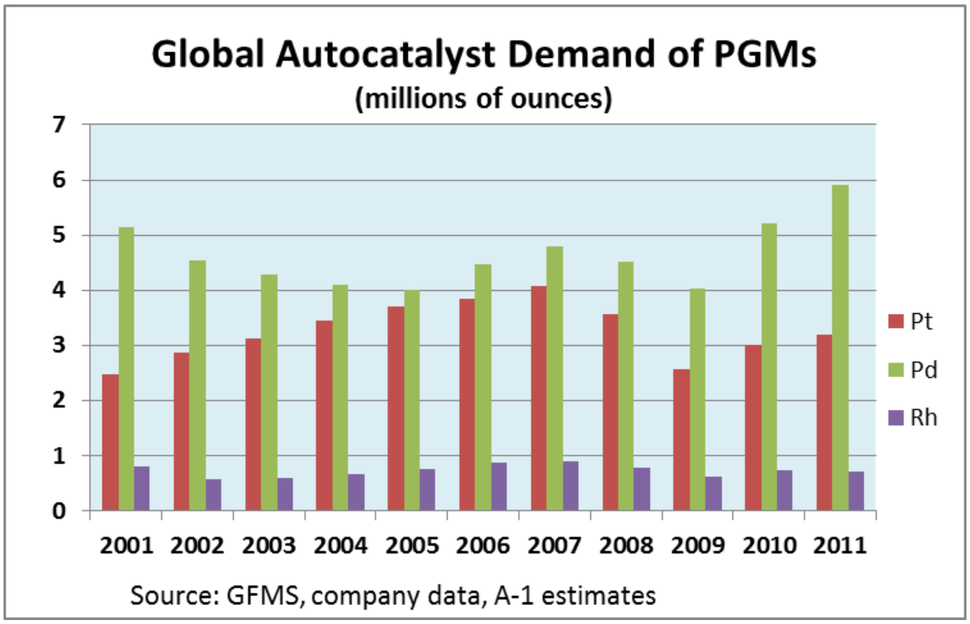
In the US, the Department of Justice initiated a program to better regulate the flow of the de-registration and scrapping of salvage vehicles against any fraudulent activity. The National Motor Vehicle Title Information System requires any salvage yard that collects more than five cars per year to report certain pertinent information such as the vehicle identification number, name of last owner, date surrendered and the eventual disposition of the vehicle, crushed or re-sold. Data is required to be submitted to the NMVTIS on a monthly basis. Data collected by the NMVTIS indicate that over the past 30 months an average of 11.24 million vehicles per annum have been surrendered for recycling in the US. Maintaining a repository of current information on ELV's can lead to greater efficiencies in the recycling process.

Current ELV directives also stipulate that manufacturers should design new vehicles to contain more recycled material and to be built in such a way as to be more efficiently disassembled and recycled. New cars should also contain less hazardous materials that make disposal more difficult and expensive. By consistently raising the efficacy of automotive recycling and in turn the rate of recovery of spent autocats, the PGMs used for catalytic purposes come closer to being regarded as a renewable resource.

Autocat recycling initiatives have begun to evolve in the developing nations as vehicle ownership continues to rise. In China, for example, it has been estimated that some 900,000 to a million cars are currently being disassembled each year, which is believed to represent around 80% of available end-of-life vehicles but only some 5% of annual new car sales. By comparison, the approximate 11 million cars recycled each year in Europe equates to 75% of annual sales. And despite the annual sales of new vehicles in China climbing to a record level of 18.5 million in calendar 2011, their contribution of salvage autos to global recycling totals will be modest, perhaps even for most of the next decade. This disparity can be explained by the fact that only two million cars were produced in China ten years ago, leaving present availability of retired vehicles at a minimum, and that the demand for functioning used cars is quite high given the growth in personal wealth. Industry consultants Wards Auto estimates that 78 million registered cars remain in operation across China, an amount that could continue to increase by 20 million a year. Undoubtedly, the rate of automotive recycling in China will rise later this decade as more end-of-life vehicles make their way to market. Given the smaller engine size of the autos produced for the Asian markets, palladium will again likely be the most abundant of the PGMs recycled from salvage autocats in China and elsewhere in the East.

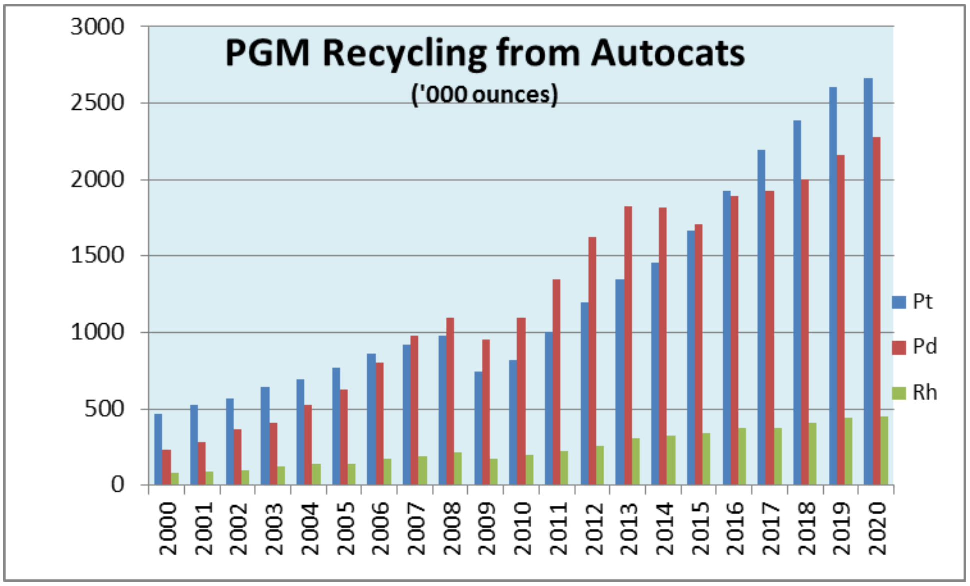
The rapid increase in the amount of metal reclaimed from spent autocats experienced over the past several years is expected to continue for some time. Improved efficiencies in the collection process, more attractive pricing opportunities, broadening environmental regulations, an increasing commercial need for the metal and a growing pool of aging automobiles, all on a global basis, should collectively support further significant growth in the recycling of the PGMs used in the automotive sector.

Palladium from recycled converters is expected to continue to grow at a faster pace than that of platinum or rhodium for the next several years, a consequence of the proportionately heavier loadings of palladium used in the manufacture of converters in the late-nineties. In the latter half of this decade, however, the immense above ground stocks of platinum currently stored in European diesel converters will start to become available for recycling and the quantity of recovered platinum should then enter a period of comparative growth. Moreover, this anticipated change in the balance of recycled PGMs is also reflective of the decrease in palladium usage in the first half of the past decade, as illustrated below, resulting from supply disruptions and the consequent spike in the price of the metal in 2000 and 2001.



And given our assumption of a 12-14 year average car life, the amount of palladium sourced from recycling should rebound in the period beyond 2020 as the marked increase in the use of the metal in converter manufacture during the past few years is recovered. Additionally, some measure of increase in the flow of salvage converters from China may also be expected to commence in the next decade, and with its greater mix of palladium to platinum used in converters, the majority of the PGMs reclaimed will be that of palladium. And if we assume that more than one million ounces of palladium are currently required for autocat manufacture to accommodate China, then even a 20% recycling rate of these converters will have a significant accretive effect on overall secondary supplies available going forward.

Worldwide, it has been estimated that as many as one billion cars and trucks are still functioning, owing in part to a greater demand for used vehicles and cars overall, particularly in developing countries, and in part to the inefficiencies of the recycling process. Consequently, the projected long-term rise in vehicle sales should bolster the already sizable volume of vehicles that are potentially available to be scrapped and recovered.



Recycling volumes have improved substantially over the past year as a result of solidly higher metal prices, up from the trough of 2008, better market efficiencies and more stringent end-of-life regulations. A-1 estimates that palladium sourced from the recycling of scrap converters could see a 20% increase in 2012, rising to 1.62 million ounces, up from 1.35 million ounces in 2011, to a record level that ranks third in size only to Russian and South African primary mine production. Platinum totals from recycled converters could rise to 1.2 million in 2012, from 1.0 million last year, while rhodium could see a 15% increase to 260,000 ounces (225,000 ounces in 2011).