

PRICES & FUTURES MARKETS

PLATINUM

The platinum price was subject to extraordinary volatility during 2006, with spells of frantic trading activity, particularly in May and November, alternating with periods of relative calm. The price opened in London at \$982, which proved to be the low point, and ended at \$1,117, only 14 per cent higher, despite briefly achieving a spot price of \$1,400 in Tokyo in November. Considerable speculator and investor interest, combined with a finely-balanced physical market, produced this strong performance and significant price spikes.

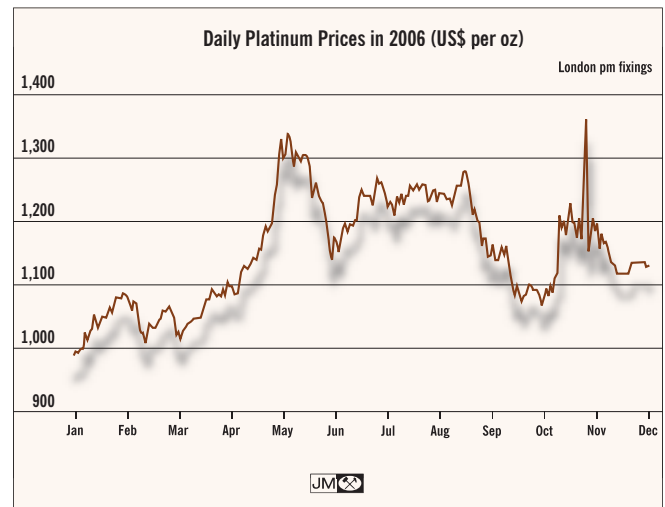
There were high levels of interest in many commodities, fuelled by continuing Chinese economic growth and increased hedge fund and other investor activity. As so often, many movements in the platinum price were prompted by shifts in the oil or gold markets. Continued weakness of the US Dollar also played a part in allowing metal prices to rise. However, platinum was, in price terms, a comparative underperformer amongst metals in 2006, showing a lower percentage increase than copper, nickel and even palladium.

Starting at \$982, the platinum price rose throughout **January** on the back of speculative buying on both NYMEX and TOCOM. The psychologically-important \$1,000 level, which platinum had approached at the very end of 2005, did not present a significant barrier in early 2006, and platinum fixed at an all-time record of \$1,049 on the 16th, \$1.50 higher in absolute terms than the previous record set in March 1980.

In late January, a sudden strengthening of the US Dollar against the Yen encouraged general public investors onto TOCOM and provided an opportunity to

push platinum over ¥4,000 per gram. As contracts equivalent to more than one million ounces changed hands on the 30th, platinum reached ¥4,059 for the December 2006 contract and provided the impetus for a month-end London fix of \$1,072. The platinum price averaged over \$1,000 for the month, something it did throughout 2006.

The gold price wilted in **February**, due to profit-taking



from investors, and platinum followed. Selling in a range of commodities coincided with the Chinese New Year, removing some physical demand from the platinum market and causing the price to dip to \$997 on the 16th, the last point of 2006 when it was in triple figures. Many funds viewed this as merely a correction in the bull run in commodities. Fund short covering and Chinese jewellery purchasing soon combined to drive the price back higher to \$1,063 on **March** 3rd.

However, a weaker gold price drove fund long liquidations in platinum. The price of the latter drifted down to test \$1,000 in mid-March. Chinese physical demand provided support as the jewellery trade restocked after the major sales period of the Chinese New Year. For once, the silver price came into play. As this surged ahead, platinum rose to a record of \$1,084 on the 30th before the predictable profit-taking came, cutting a few dollars from the price.

In **April**, a weak Dollar and increasing fund activity took gold toward \$600, its highest price for 20 years. This reignited interest in precious metals amongst TOCOM investors, who pushed platinum to \$1,095 before the quiet Easter period. When the other markets returned on the 18th, platinum moved over \$1,100 and continued climbing in line with a range of commodities. Lonmin announced the temporary closure of a smelter at its Marikana property, applying further upward pressure to the price which rose to \$1,130 on the 20th.

Platinum continued to hit a series of new record prices throughout the month, yet the markets took a fairly relaxed view, with lease rates remaining low, indicating little trouble with physical availability of the

The platinum price continued climbing into 2006 and reached all-time record peaks of \$1,335 in May and \$1,390 in November.

Average PGM Prices in \$ per oz			
	2005	2006	Change
Platinum	897.02	1,141.84	27%
Palladium	201.47	320.37	59%
Rhodium	2,056.18	4,551.59	121%
Ruthenium	74.59	193.42	159%
Iridium	169.49	348.87	106%

Platinum and palladium prices are averages of London am and pm fixings. Other pgm prices are averages of Johnson Matthey European base prices.

metal, and large volumes trading on the fix. Tellingly, speculative long positions on NYMEX increased by 85,000 oz to 301,000 oz during April, suggesting that many investors believed there still to be good potential for price growth from this point.

Further support for the price in early **May** came from rises in the gold price. Many fund investors were clearly keen to test the \$1,200 barrier (and also €1,000) for the first time. With this sharp price rise, physical buyers were sidelined but speculative buying carried the price through this level and platinum fixed at \$1,206 on the 9th and \$1,259 only 24 hours later.

As gold continued to appreciate amid similar excitement, reaching \$725.75, platinum hit a new peak of \$1,335 on May 12th. After a few days of retrenchment, the price softened to \$1,275 before weakness in the US Dollar provided an opportunity for Asian investment.

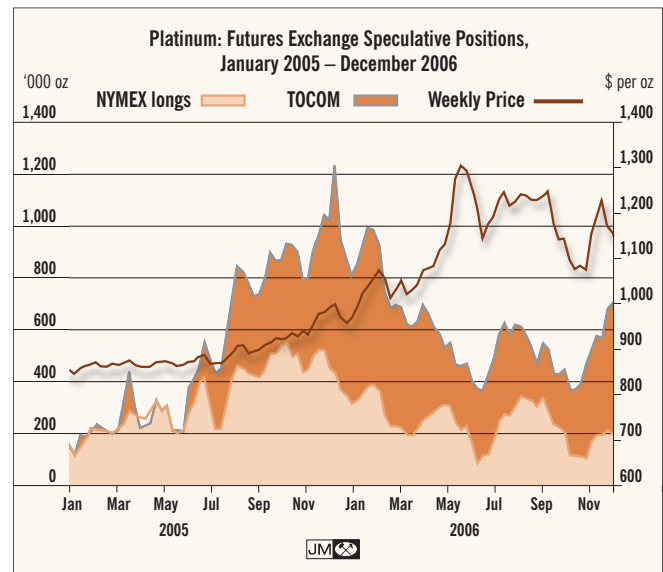
Investor buying there ensured that platinum reached \$1,335 again on the 17th before profit-taking caused the price to subside to \$1,280 by the month's end.

As most commodity prices fell from their highs, the platinum price crumpled to \$1,125 in the second week of **June**. Net long positions on NYMEX dropped 160,000

oz to an anaemic 80,000 oz, signifying an end, for the moment, to the speculative feeding frenzy. During the rest of the month, the price moved back higher, helped by an announcement that Implats' annual production was to be lower than expected by 70,000 oz. At the end of June, poor US domestic economic data weakened the dollar and sent gold soaring. Platinum reached \$1,226 before the market exuberance diminished, leaving it to trade between \$1,200 and \$1,260 throughout **July** and **August**. Some of the spur for this strong performance came from

the New York futures markets where platinum long positions rebounded from a June low of below 80,000 oz to top 300,000 oz.

At the start of **September**, the price firmed and successfully challenged the top of this range, fixing at \$1,268 on the 6th, driven by a mix of technical buying,



fund purchases and minor disruption in Lonmin's projected sales due to a fire at its refinery.

External events intervened, with speculation in the financial markets that the so-called "commodity super-cycle" might be at an end. This led to sales of significant volumes of all classes of commodities. Platinum was not immune and tumbled to \$1,127 over the following weeks despite good levels of purchasing on the Shanghai Gold Exchange, as Chinese jewellery manufacturers took advantage of a softer metal price. A thaw in Iran's stance on its nuclear programme drove oil prices down, deepening the price spiral. Even with the dollar weakening, platinum could not recover ground and it traded the month out in a new range of \$1,120-\$1,150, with long positions on NYMEX falling.

The price dipped suddenly below this range at the start of **October**. With the Chinese markets closed for the National Day holidays, the opportunistic buying that had appeared on price dips throughout the year was missing, allowing the fall to continue. Fund long liquidations drove the price sharply down before short covering provided support. On the reopening of the Shanghai Gold Exchange on the 9th, the level of pent-up jewellery demand was shown by 270 kg of metal changing hands in one day. Further fund sales of metal (illustrated by reductions in long positions on NYMEX which fell from 196,000 oz to 100,000 oz over the month) drove the price down to a low of \$1,053 on the 24th, demonstrating the importance of investors within this market. Elsewhere, general public interest in gold

NYMEX and TOCOM positions represent only a portion of fund and investor open interest but still exert a strong influence on the platinum price.

Platinum Prices in 2006 London am and pm fixings, \$ per oz			
	High	Low	Average
January	1,074.00	982.00	1,029.00
February	1,080.00	997.00	1,041.40
March	1,084.00	1,006.00	1,041.50
April	1,149.00	1,063.00	1,101.60
May	1,335.00	1,164.00	1,264.35
June	1,258.00	1,125.00	1,188.90
July	1,258.00	1,196.00	1,229.00
August	1,251.00	1,216.00	1,233.75
September	1,268.00	1,127.00	1,184.65
October	1,150.00	1,053.00	1,083.75
November	1,390.00	1,086.00	1,182.90
December	1,175.00	1,102.00	1,121.35
Annual	1,390.00	982.00	1,141.84

EXCHANGE TRADED FUNDS

Exchange traded funds (ETFs) already exist in a number of commodities, including gold, with the aim of simplifying consumer investment in them. In essence, shares in an ETF are traded on stock markets just as for conventional companies but the value of the shares is backed by allocated stocks of the physical commodity concerned. If a platinum ETF were to be launched along the same lines as some of the gold ETFs, this would be likely to require the purchase of a significant amount of the metal beforehand, with the effect of reducing metal liquidity. In a relatively closely-balanced market, this would have the potential to cause greatly-increased price and lease rate volatility.

The market therefore reacted apprehensively to the November rumours that an ETF might be launched. With prices falling rapidly back from their brief foray to \$1,400, comments by a number of analysts and industry participants calmed the excitement. With no sponsor forthcoming for such a fund and no evidence that any party had bought sufficient physical metal to back one, the prospects of an ETF rapidly receded and the price softened. However, the announcement by the Zuercher Kantonbank of its plans to launch platinum and palladium ETFs caused considerable market nervousness in April 2007.

and platinum on TOCOM started to revive with long positions building in size.

High intra-day volatility illustrated a sense of nervousness in the market in early **November**. Platinum began the month at \$1,086. A weak dollar helped the gold price to rise and allowed platinum to break through its ceiling of \$1,100 on the 2nd, reversing any bearish sentiment and causing many traders to look at \$1,200 as the next challenge. Later that day, speculator buying on NYMEX saw the price shoot higher and platinum fixed at \$1,207 in London on the 3rd, amidst rumours of the possible launch of a platinum exchange traded fund (ETF).

Investors on TOCOM were caught out by this sudden movement but had caught up by the 9th,

allowing profit-taking to take the price back down to \$1,164. This volatility rekindled the Japanese public's interest in platinum, taking open positions on TOCOM back over 400,000 oz for the first time since April, albeit significantly below their January peak.

With very large volumes of platinum changing hands on the afternoon fix of the 9th, the price gained \$28, followed by a similar move on the 10th. The market regained its composure until the 20th when platinum raced higher, from \$1,155 the previous morning, to \$1,262. Although market speculation attributed this rise to the ETF rumours, the real reason appeared to be the maturation of a number of call options at the end of November where physical delivery of metal was requested, something not easily achieved with stocks at low levels. Amidst this temporary tightness, one month lease rates soared to 30 per cent and Swiss ingot traded at a substantial premium to sponge prices.

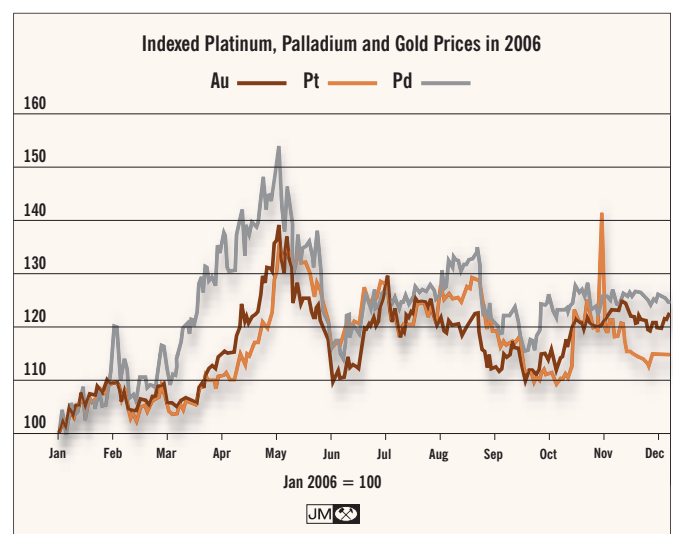
The extraordinary price movements continued in Tokyo as the spot price briefly exceeded \$1,400 before fixing at \$1,390 in London on the 21st. Lease rates also rose, moving to well over 100 per cent before both the price and lease rates fell, as quickly as they had risen, to \$1,160 and 25 per cent respectively on the 22nd. This represented a remarkable fall of 17 per cent in the price over a 24 hour period. With these options settled, platinum ended the month at \$1,171 with lease rates still easing, eventually returning to normal levels.

December started with the price firming in Asia and weakening later in Europe. Platinum threatened to slip under \$1,100 but purchasing in Shanghai came to the rescue with 200 kg of metal traded on the 8th. Market conditions were quiet over the rest of the month, with no appetite for more volatility in the price. Stuck in a holding pattern between \$1,100 and \$1,125, platinum ended the year uncharacteristically quietly at \$1,117.

PALLADIUM

The palladium price outperformed that of platinum in 2006 despite weaker fundamentals, climbing 24 per cent from \$261 (the year's low) to a year-end \$324. An active first six months was followed by a quieter second half when the price moved little. Long positions held by funds on NYMEX decreased over the year but it seems likely that funds switched some of their open interest to the large volumes of metal shipped into Switzerland and Hong Kong, maintaining significant positions in palladium.

The general impact of the continuing commodity price boom is reflected in the similar price behaviour of gold, palladium and platinum in 2006.



The platinum price soared to historic highs in **January** diverting attention from palladium which traded largely between \$260 and \$280 with minor changes in fund positions. The last day of the month saw fund buying spill into palladium and push the price to \$290, encouraging investors to target the psychologically-important \$300 point.

With palladium still considered to be undervalued (by comparison with other metals and its historical peaks) long positions on NYMEX rose above one million ounces. They melted away a little as profits were taken when palladium climbed sharply to \$315 on **February 3rd**. With a sell-off taking place in gold, heavy selling of Russian metal over the fix drove the price into reverse, sending it scurrying down to a low of \$273 on the 16th. Palladium traded the month out between \$280 and \$290 while the market digested statistics showing imports of 500,000 oz of palladium into Switzerland in January.

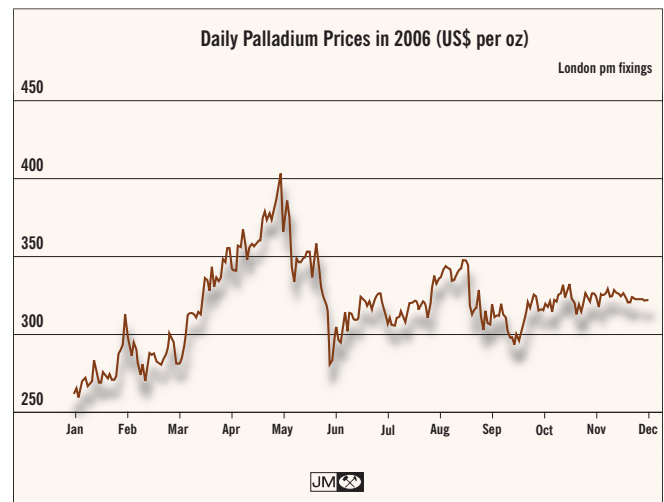
However, at the start of **March**, a buoyant gold price lifted all of the pgms and palladium rose to \$305, providing an opportunity for funds to crystallise some of their profits. The price softened to a monthly low of \$283 but good physical demand and residual speculator interest drove palladium strongly onward from that point to \$345 on the 30th before the next bout of profit-taking. NYMEX positions resumed their slow growth, indicating the extensive investor appetite for this metal, peaking at 1.1 million ounces in **April**.

Palladium Prices in 2006 London am and pm fixings, \$ per oz			
	High	Low	Average
January	290.00	261.00	273.55
February	315.00	273.00	289.30
March	345.00	283.00	309.65
April	370.00	334.00	353.10
May	404.00	336.00	369.05
June	361.00	282.00	315.65
July	330.00	304.00	318.20
August	346.00	312.00	329.05
September	351.00	303.00	323.25
October	327.00	295.00	313.05
November	334.00	314.00	324.70
December	331.00	321.00	325.95
Annual	404.00	261.00	320.37



The pattern of a rising price followed by long liquidations continued, dominated by fund buying and selling. Gold and platinum prices pushed onward. Palladium rose in sympathy, reaching a monthly peak of \$370, 31 per cent above March's low. NYMEX positions continued to lengthen, demonstrating a certain disregard for the short-term supply surplus by some of the investment community.

After reaching \$370 on April 20th, a short-term correction in gold saw the palladium price fall into a range of \$345-\$365 as NYMEX positions were slowly



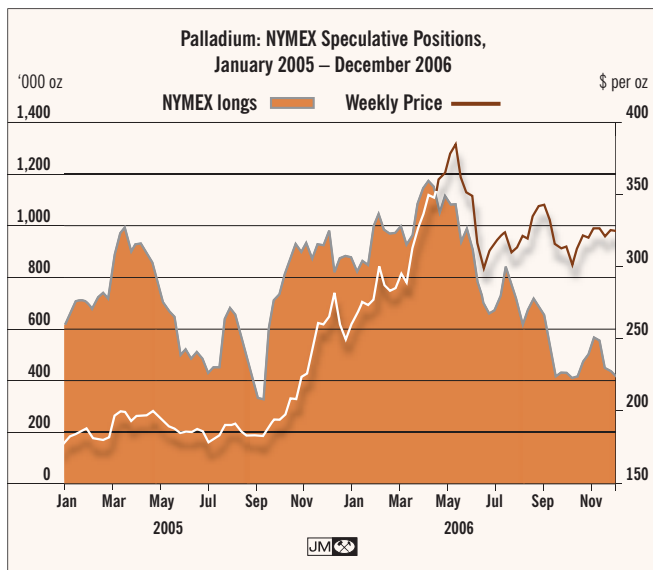
unwound by investors. The month's final fix was relatively neutral at \$362.

Palladium started **May** with upward momentum, leaping to \$378 on the first trading day. Platinum broke through \$1,200 on the 9th and palladium technical traders started eyeing the \$400 mark. As platinum hit an all-time high on the 12th, the price of palladium reached \$404, the highest point for four years, and as it transpired, the peak for 2006. Although speculative NYMEX positions remained above the million ounce level, the price slipped with low intra-day volatility indicating a simple excess of market offers over bids. Investors seemed happy with the gains made and the price continued sliding to \$355, \$23 lower over May.

Movements in palladium showed a direct link to those of platinum throughout **June**. The price stayed firm for the first few days before the markets were unnerved by a number of funds liquidating long positions. A slide in commodity prices, including gold, undermined palladium and saw it tumble. It finally pulled out of its dive at \$282 on the 13th, having fallen 30 per cent from its peak in just over a month. At the same time, long speculative positions on NYMEX fell sharply to 700,000 oz. Commodity prices stabilised and palladium recovered to end the month at \$312.

Palladium traded between \$300 and \$330 during **July**, with support from geopolitical events. Test-firing of a missile by North Korea took oil to a record high on the 6th but did not invigorate the palladium price. The invasion of Lebanon by Israel sent oil higher again but palladium responded only sluggishly. Slipping from a monthly peak of \$330, it fell to \$304 but physical buying

The palladium price was influenced by rising gold and platinum prices. However, after moving over the \$400 level, it retreated to below \$350 for the second half of the year.



Fund positions on NYMEX declined from the early 2006 peaks, although it seems likely that institutional investors maintained large speculative positions in palladium.

re-emerged. Palladium ended the month at \$309.50. Perhaps surprisingly, NYMEX long positions grew over the month from 630,000 oz to 770,000 oz.

The first half of **August** was quiet with palladium stuck between \$310 and \$330. A ceasefire in Lebanon weakened oil, bringing palladium to a low of \$312 on the 14th. Residual fund interest prompted a leap into a new range of \$330-\$350. The price ended August 9 per cent up at \$341.

With Montana's Stillwater and East Boulder mines closed in early **September** due to wildfires nearby, the price moved above \$350 on the 7th. With commodities weakening on the 8th, palladium was hit hard, dropping 7.5 per cent in 24 hours. The decline continued as it dropped to \$307 on the 13th. It tested the \$300 resistance level but industrial purchasing helped it rebound to \$330, with very large volumes being traded on the fix and heavy purchasing to cover investor short positions. Palladium challenged \$300 again but bounced back from a monthly low of \$303 and ended the month trapped between \$310 and \$325.

This roller coaster pattern was seen again in the first half of **October**. Despite rising long interest on NYMEX, softer oil and gold prices dragged palladium down. The price drifted below \$300 before tension in the Korean peninsula prompted a recovery. Long futures positions increased and a positive investment sentiment, inspired by technical trading, pushed palladium back to where it had been in September.

November was remarkably quiet considering the

activity in the platinum market with palladium trading between \$310 and \$335 and a monthly gain of only \$3. With speculator attention focused elsewhere, the palladium price played out a very uneventful month, failing to respond to platinum's new record price on the 21st. **December** was even less exciting although very large quantities of metal were exported from Russia to Switzerland. There appeared to be no investor appetite for buying or selling in palladium. It started the month at \$326 and edged up to \$331 on the 5th before settling as many NYMEX positions were closed in advance of the year end. As these dropped from 436,000 oz to only 388,000 oz, the price did not stray too far and closed the year at \$324, 24 per cent up on its starting point.

OTHER PGM

The rhodium market was subject to considerable volatility throughout 2006. Having started the year at \$3,000, it ended 85% higher at \$5,550, having peaked at \$6,275 in mid-May, representing the third successive year of strong price growth.

These price movements were caused simply by the shifting balance between market bids and offers. With fundamental demand for rhodium continuing at a high level, a supply-demand deficit drove the price higher throughout this period. In this environment, purchasers paid great attention to the short-term price behaviour, flooding the market with bids on dips in the price and disappearing as the price rose, bringing more offers of metal into play. As a result of this bargain-hunting the rhodium price was also subject to very high volatility throughout most of the year.

In retrospect, **January's** \$400 rise from \$3,000 was unremarkable and **March** saw the first big movement of the year. Solid physical demand was not matched by availability of metal in the open market and prices rose by \$850 to a fifteen year high of \$4,350. Offers increased in number, bids became scarcer and the Johnson Matthey base price turned around almost as quickly, falling to \$4,000 in early **April**. At this level, there was strong physical buying in Asia. The price rebounded with dealer interest driving a dizzying climb of \$900 in a week to the year's highpoint of \$6,275 on **May 22nd**.

With no purchasing at all at these levels, the price slid to a mid-**June** low of \$4,175. The thin conditions were exemplified at the Comdaq fix on June 9th where

the price dropped by \$800 with a few small offers unmatched by bids and no metal changing hands. The cycle then repeated, sending rhodium back above \$5,000 before it drifted lower, spending **August** at \$4,650. The rest of the year saw much calmer market conditions. Although the rhodium price reached the \$5,000 level several times, it fell back each time, helped by rumours of sales of significant volumes of rhodium from automotive scrap. The underlying tension was displayed once more in **December** as the year ended with another volatile month. Constant bidding drove the price up to \$6,000 on the 20th before the quiet trading environment pre-Christmas allowed everyone to relax, with a few offers satisfying the market and the price softening to end 2006 at \$5,550.

The **ruthenium** price rose inexorably throughout the year, driven by physical demand from the electronics sector in particular. Starting at \$87, it closed at \$610, a remarkable climb of more than 600 per cent in 2006.

January was quiet with an increase of only \$3 but the Johnson Matthey base price climbed to a four year peak of \$105 in **February**, driven by physical demand. From **March's** high of \$165, the following months were uneventful. Healthy bidding interest steered the price to \$180 in **May** before it softened to \$170 in **July**.

The price settled here before rising in **September** to an all-time record of \$185, consumer purchasing again providing the impetus. With ruthenium in uncharted territory and bids outnumbering offers, the price broke the \$200 mark on **October** 12th. It kept on rising as a certain amount of panic enveloped industrial consumers, forcing the price sharply higher to \$375 by the end of **November**, a leap of 80 per cent in only one month. **December** was similar, with another 63 per cent jump, as the ruthenium price leapfrogged that of iridium for the first time ever, to close at \$610 with keen buyers still evident in the marketplace.

Although the **iridium** price more than doubled in 2006, from an initial \$195 to \$400, the price movements were less exciting. Iridium accompanied ruthenium higher for the first six months. It rose \$20 in **February** to \$225, its highest since 2004. **March** saw this climb accelerate: strong physical demand forced the Johnson Matthey base price onward to \$350 by the end of **April**. The price rose to \$400 by the middle of **May**. All excitement then disappeared from the market and the price remained flat at \$400 throughout the rest of 2006.

