

Prices and Futures Markets

Platinum

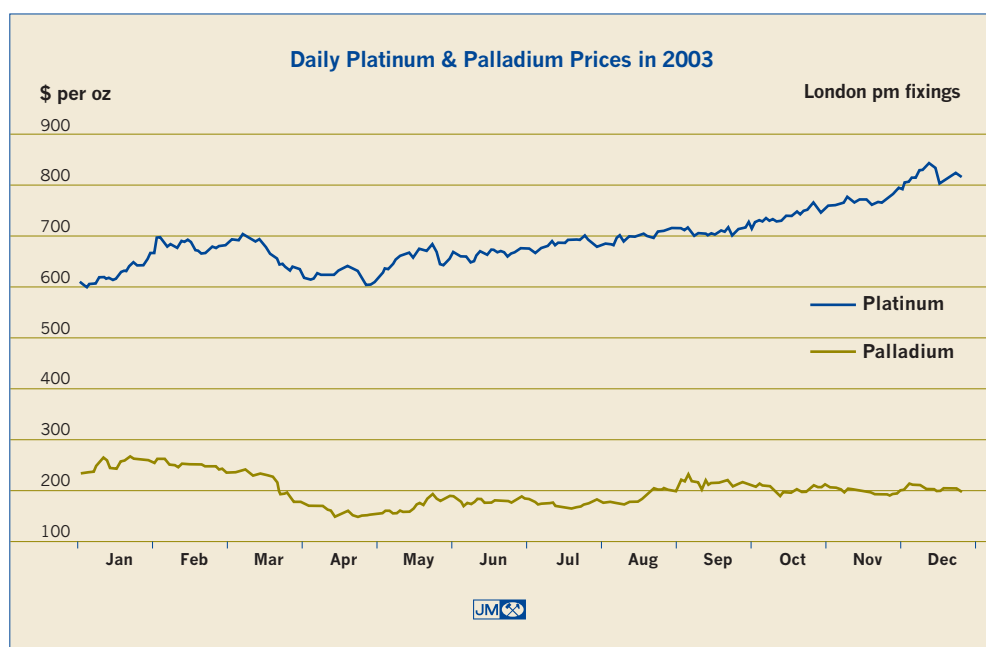
In 2003 the impressive rise in the platinum price that had begun the previous year intensified; after having increased by \$150 in 2002 it climbed by a further \$242 during 2003. The metal started the year strongly, progressing from an opening fixing of \$600 to just over \$700 in early February. Demand from industrial users and the Chinese jewellery industry was firm, and with availability tight short-term lease rates climbed rapidly. At the same time funds and individual investors rebuilt speculative positions on both NYMEX and TOCOM following long liquidation towards the end of 2002.

The platinum price dipped to \$664 in mid-February, regained \$700 in early March, and then dropped back towards \$600 through into April on a wave of long liquidation that flowed across the commodities markets as a whole. From May onwards, however, the platinum price was driven upwards in an accelerating rally, punctuated by occasional bouts of fund profit-taking, reaching a peak of \$842 in December.

The exceptional performance of the price from May onwards was due to a confluence of positive supply/demand fundamentals for the metal and a wider commodities bull market. The latter was driven by hedge funds and other investors seeking higher returns than those offered by equities and bonds (see panel on page 47 for details).

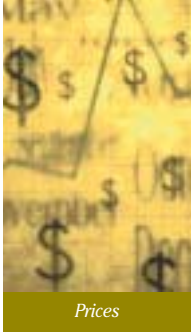
The platinum market began 2003 with a strong rally, the price climbing throughout **January** from an opening fixing of \$600 in London on the 2nd to \$669 on the 31st. Buying of physical metal by industrial users picked up following the typically slack pre-Christmas period. At the same time, funds that had liquidated long positions on NYMEX at the end of 2002 became net buyers of both gold and platinum futures as the dollar weakened significantly versus the euro. The news that Lonmin had suffered an explosion at its new smelter in South Africa contributed to the bullish tone. Speculative buying and short-covering on TOCOM provided further momentum as the yen strengthened against the dollar, and with physical availability tight, heavy borrowing pushed lending rates briefly above 20 per cent.

Further substantial buying on TOCOM by both Japanese investors and overseas funds, plus a solid level of bids across the fixings, resulted in the spot price surging to hit \$700 on the 3rd of **February**. Offers touched \$710 in Asia on the 4th as dealer short-covering came into the market and one month lease rates again spiked towards 20 per cent. However, bids for physical metal then fell away rapidly, and as funds started to take profits the spot price slumped to \$676 on the 6th. From then on the price bounced between \$664 and \$700, moving in response to fund activity and the availability of metal for lending. Platinum closed February with a fixing of \$681, the spot market being

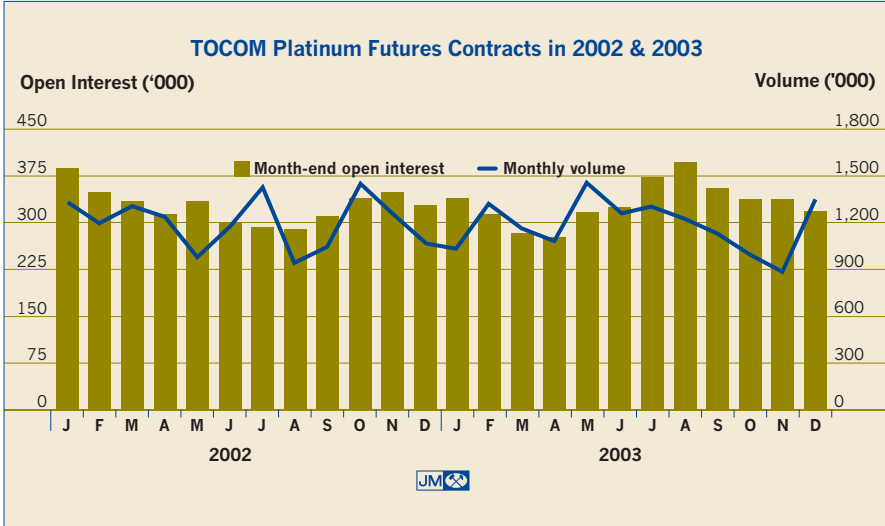


	2002	2003	Change
Platinum	539.69	691.86	28%
Palladium	337.23	200.61	-41%
Rhodium	838.05	530.27	-37%
Iridium	293.57	93.07	-68%
Ruthenium	66.41	35.04	-47%

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



Prices



on the morning fix of the 9th, traded steadily for several days, then edged up towards \$640. However, when increased volumes of physical metal were offered the market turned down again. Investor sentiment turned bearish, with concerns starting to be aired about the possible impact of the SARS virus on Chinese jewellery demand. Long liquidation of futures positions pushed the platinum price downwards and the metal ended the month fixed at \$603.

The platinum price staged a strong rally in **May** as the increasing weakness of the dollar versus the euro and yen boosted purchases of platinum by industrial users and encouraged investors to rebuild long positions. Speculators also took advantage of tight physical availability to squeeze the market; short-term lease rates jumped from less than 8 per cent to over 20 per cent and the price rose from \$606 on the 1st to \$685 on the 27th. The dollar then recovered some ground against major currencies, triggering long liquidation of futures positions by funds. With offers of physical platinum also increasing, lease rates swiftly fell back below 10 per cent. The platinum price slid in tandem, finishing May at \$642.

The start of **June** marked the beginning of an increasingly rapid and occasionally volatile climb in the price of platinum that lasted until almost the end of the year. Most of the momentum came from fund buying of derivatives, although physical demand also remained solid. With banks and brokers offsetting their exposure to the funds' long futures positions by buying and then lending physical metal, lease rates began moving inversely to the spot price.

The platinum price jumped from under \$640 on the 2nd June to \$669 on the 4th and 5th, driven by dealers and funds opening new long positions on NYMEX and by heavy trade on TOCOM. The unpredictable market then turned around again as increased lending pushed short-term lease rates lower and the spot price subsided to \$646 on the 11th. Good physical demand was found at this level, and platinum moved back up to trade between \$660 and \$670 for much of the remainder of the month.

Funds continued to be net buyers of platinum futures (as well gold and base metals) throughout much of **July**, largely inspired by moves in the foreign exchange markets. In particular, the rapidly increasing strength of the rand (which moved from over R8 to the dollar at the start of June to less than R7.4 by the end of July) was seen as bullish for platinum because of its

supported by short-term lease rates in the mid-teens.

Early **March** saw further concerted buying of platinum futures on TOCOM as the dollar lost more ground versus the yen and euro. The price of platinum climbed to \$699 on the 5th, then ran up to \$705 on the morning of the 11th as Japanese investors switched cash out of the rapidly falling equities market and into precious metals. As in February, however, the rise to over \$700 resulted in a fall in bids for metal from industrial users and platinum slipped back to trade between \$688 and \$700 for the next seven days.

On the 18th a rapid sequence of long liquidation began on TOCOM across several commodities, starting with a sharp drop in the price of crude oil and moving into metals. Stop-loss sell orders were hit as the platinum price started to fall, and by the end of trading in New York on the 19th it had dropped to \$673. The dollar strengthened sharply against the yen on the 20th spurring more selling in Tokyo, and the price continued to weaken over the following week. By the 28th of March, platinum had slumped to \$625.

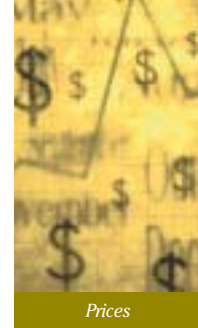
After a brief rebound to \$645, the platinum price weakened again in early **April** as a sharp strengthening of the dollar against the yen (and an associated drop in the gold price) triggered a further round of selling on the futures markets. With physical demand still soft, particularly from Chinese jewellery fabricators, the price slipped from \$642 on the 1st to fix at \$611 on the morning of the 8th.

At that level physical bids increased, whilst on NYMEX funds began rebuilding long positions, squeezing speculators that had gone short when the platinum price was falling. Platinum moved up to \$625

Platinum Prices in 2003

London am and pm fixings, \$ per oz

	High	Low	Average
Jan	671.00	600.00	629.63
Feb	703.00	664.00	682.25
Mar	705.00	625.00	675.76
Apr	642.00	603.00	624.70
May	685.00	606.00	650.73
Jun	674.00	638.00	661.75
Jul	700.00	665.00	681.93
Aug	709.00	677.00	692.50
Sep	714.00	696.00	705.24
Oct	762.00	710.00	732.38
Nov	772.00	738.00	760.25
Dec	842.00	770.00	807.75



potentially negative effect on the earnings and expansion plans of South African pgm producers. Further dollar weakness against the yen also fuelled continued buying of futures through TOCOM. As a result the platinum spot price climbed from an opening fixing of \$671 to hit \$700 on the 29th. With physical trade becoming increasingly light, however, and the dollar recovering somewhat, the price then slipped to \$684 on the 31st.

A degree of investor profit-taking kept the platinum price close to \$680 during the first 10 days of **August** and physical trade was thin. From the 11th onwards, however, speculative buying of the metal resumed strongly and funds targeted investors holding short positions on TOCOM. With gold also rallying, platinum climbed to breach \$700 by the 20th and the price fixed at a new high for the year of \$709 on the 27th. Although volumes of physical trade diminished even further, fund buying on NYMEX ensured the platinum price ended the month well supported at \$707.

The speculative buying that had pushed the platinum price above \$700 in late August continued into early **September** as the dollar dropped sharply against the euro, driving the metal to a fixing of \$714. A degree of fund profit-taking resulted in a price correction back under \$700 in mid-month but this moderate dip encouraged an increase in physical purchasing, particularly from Chinese jewellery fabricators who were stocking up ahead of the October National Day holiday. The price consequently regained its previous high of \$714 on the 25th. Volatile trading, related in part to the imminent expiry of options, marked the last week of the month but platinum ended September firmly at \$710.

The price of platinum resumed its firm upward trend in **October**, with speculative buying of the metal once again providing most of the momentum. The price jumped from an afternoon fixing of \$711 on the 2nd to \$726 on the 3rd as Anglo Platinum said that it would release an update on its expansion programme during November. The expectation that the company would reveal a substantial cut in its schedule of expansions added to the already bullish view of investors. After being knocked back to \$710 on the 6th the platinum price rose rapidly throughout the month, peaking at a fixing of \$762 on the 30th. In contrast, however, one-month lease rates eased, subsiding from 7.5 per cent to around 4.5 per cent.

A flurry of profit-taking and increased offers of

Fund buying of pgm

The concerted buying of commodities by funds throughout 2003 and into 2004 has been based on a combination of many factors: low to negative real interest rates in the USA and Japan, the relatively poor performance of major equity markets from 2001 onwards, unattractive bond yields, the weakening of the dollar versus major currencies, the prospects of continued strong economic growth in China, and improving industrial output in the USA and Japan.

The effect of the depreciating dollar in particular on the price of platinum in 2003 was substantial. Statistically, the relationship between two variables can range from 1.0 (a perfect positive relationship) down to -1.0 (a perfect inverse relationship – i.e. as one variable goes up, the other moves down proportionally). The inverse correlation between the price of platinum and the \$:rand exchange rate over the year was -0.76, with the \$:euro the link was -0.71 (rising to -0.83 for the second half), whilst the relationship with the \$:yen exchange rate was even stronger at -0.86.

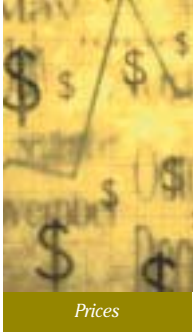
Of course, fund buying of hard commodities is also tied in with market fundamentals. For platinum the key factors are several years of deficit between primary supply and demand, a perception of increasing supply side risk (largely based on the rising strength of the rand), the resilience of Chinese jewellery demand, and a favourable outlook for autocatalyst use of the metal. In these respects, the platinum market shared close similarities with those of nickel and copper in 2003 (growing market deficits, Chinese buying a major component of demand, increasing supply side risks). Consequently, the positive correlation between the platinum price and that of nickel and copper (LME cash price) last year was remarkably high at 0.93 and 0.94 respectively.

The appeal of commodity markets has not been confined to hedge funds. Mutual and pension funds have been increasing their exposure to 'alternative' investments, whilst smaller investors have participated on NYMEX via Commodity Trade Advisors as well as through over-the-counter (OTC) deals. Investment banks have increasingly marketed commodity related derivatives such as warrants and certificates to their clients.

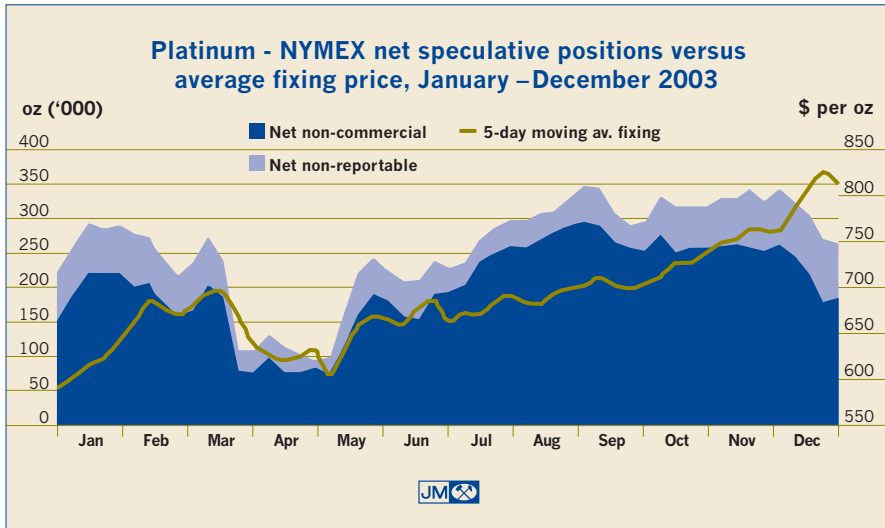
For palladium, however, it was (and is) harder to make a bullish case for investment based on the metal's fundamentals. The market has been in a position of oversupply since 2001. Supply will continue to grow strongly from the expansion of pgm mining in South Africa and from increased recycling of autocatalysts and electronic waste. Even with the most optimistic projections for autocatalyst, electronic and dental demand, the palladium market appears set to remain in substantial surplus. Nevertheless, as the price of platinum climbed in 2003, fund managers increasingly inferred that the differential between it and the price of palladium would become unsustainably large. With the risk of a downward correction in the platinum price considered small, due to the metal's strong fundamentals, the conclusion was that the price of palladium would almost certainly have to rise.

In addition, the platinum and palladium markets are very small compared with other commodities, and are minute compared with equity, fixed income or foreign exchange markets. Consequently, significant activity by hedge funds can move the price in either direction regardless of the fundamentals. Furthermore, price trends can rapidly become self-sustaining as funds that trade on momentum or technical indicators are drawn into the market.

The small size of the pgm markets, however, and their relatively high volatility also increases the risks for investors. Palladium in particular can be a highly illiquid financial instrument, as was shown by the suspension of the TOCOM contract in 2000. The risk, therefore, of being unable to close out a position when the market turns can be significant.



Prices



Non-commercial futures positions are those held by hedge funds, bullion banks and others for speculative purposes. The non-reportable category comprises investors whose total positions fall below the limit specified by the US Commodity Futures Trading Commission.

physical metal took the platinum price down to \$738 on the 3rd of **November** before speculative buying returned to drive the price higher once again. By the close of trading in New York on the 4th offers of platinum had passed \$750, the price regained the \$760 mark on the 11th, then reached \$772 on the 13th as the dollar's slide against the euro, yen and rand resumed and the price of gold climbed over \$390. Platinum then traded quietly between \$760 and \$770 for much of the rest of the month, with steady industrial demand underpinning the market. Lease rates, however, continued to soften, one-month offers dropping to around 3.5 per cent.

Further weakening of the dollar against major currencies propelled both platinum and gold prices higher in **December**. Meanwhile, Chinese purchases of metal for jewellery fabrication accelerated in advance of the Chinese New Year holiday in January 2004. In addition, Anglo Platinum confirmed market expectations by announcing a substantial scaling-back of its expansion programme. All these factors, combined with a squeeze on short-term lease rates, resulted in the platinum price soaring from \$770 on the 1st to a fixing of \$842 on the morning of the 18th – a price exceeded only once before, back in March 1980.

Profit-taking ahead of the end of the calendar year then came to the fore, starting with heavy trade on TOCOM later the same morning. As the selling accelerated the price slumped, dropping to \$825 by the close of trade in New York. The profit-taking continued through to the 22nd, pushing the price down to \$796. The drop under \$800 stimulated a brief surge of buying from China before the market

steadied and ended the year with a fixing of \$814.

From its low of \$600 at the start of 2003 to the peak fixing of \$842 on 18th of December, the platinum price appreciated by 40 per cent. However, given the weakening of the US dollar versus most other major currencies, particularly during the second half of the year, the rise was less pronounced for European and Japanese buyers. The platinum price increased by 22 per cent in yen and by 13 per cent in euros over the course of the year. The effect of currency movements on the South African pgn producers was even more pronounced: the platinum price in rand increased by just 5 per cent due to the 23 per cent appreciation of the South African currency versus the dollar.

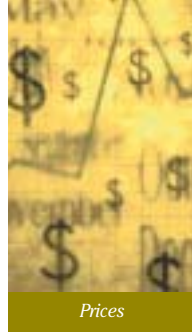
Palladium

The contrast between the price of palladium and that of platinum remained pronounced in 2003; palladium started the year at \$234 and ended it below \$200. This occurred despite very substantial fund and investor buying of the metal on the futures exchanges and in the over-the-counter market. The price of the metal was held in check by the softness of industrial demand and the readiness of suppliers to sell into any signs of price strength.

The palladium price made solid gains during the first few weeks of 2003, driven by a brief upturn in industrial buying, a drop in physical availability, and the liquidation of short futures positions. The price climbed from \$234 to reach \$271 by the third week of January. The rally, however, was short-lived and the palladium price faded during February, then plunged during March and early April as bids for metal dried up.

After hitting a low of \$144, the price recovered to trade between \$170 and \$180 for much of the next three months. A rapid increase in speculative buying on NYMEX and TOCOM then provided the impetus for a second rally that peaked at \$232 in September. However, the price eased during the fourth quarter to end the year at \$193.

In early **January** 2003 the palladium price staged a robust recovery from its low of \$222 the previous December as funds closed out approximately 80,000 oz of net short positions on NYMEX. At the same time, interest from industrial buyers picked up but offers of physical metal diminished. As a result, the spot price



climbed from an opening fixing of \$234 to reach \$267 on the 10th. This attracted increased volumes of metal back into the spot market and the price dipped to \$242 on the 14th. A second rally then emerged as moderate fund buying (encouraged by labour problems at Norilsk Nickel) took the price up to a peak of \$271 on the 22nd. However, whilst platinum continued to rise, the price of palladium then faltered in the face of heavy sales of physical metal on the London fixings and faded to end the month at \$256.

The fundamental oversupply of palladium continued to weigh on the price during **February**. After initially moving up from \$261 to \$266 on the 4th the market subsided, with relatively small volumes of metal sufficient to move the price. By the 11th palladium had slipped below \$250, then spent the next two weeks trading very quietly between \$250 and \$255. The market broke downward again on the 27th when large lots of metal were offered across the fixings, the price dropping to \$243 as a result.

The palladium market was very subdued during the first half of **March**: the price traded within a \$5 range around \$240 through to the 12th. On the 13th the price slipped to \$230 but then stabilised again for the next 10 days. On the 24th, however, the price entered a precipitous decline when offers of metal on the fixing met with no buying interest – the price slid to \$216 before matching bids were found. The fall was exacerbated by stop-loss selling by dealers holding long physical positions. The slump continued on the 25th as palladium offered on the afternoon fixing found few bidders until the price dropped below \$200. Moderate volumes of physical metal struggled to find buyers throughout the rest of the month, palladium ending March at \$180.

The collapse in the palladium price continued into **April**, the metal sliding to \$168 by the morning of the 8th. On the 14th an almost total absence of bids on the morning fixing resulted in a further drop to \$161, the price slumped under \$150 on the 16th, then hit \$144 the following morning – a six year low. A muted rebound to \$160 was seen following the Easter break, aided by a degree of fund buying on NYMEX and dealer short-covering. Physical demand, however, remained weak and palladium slipped back to trade either side of \$150 for the rest of the month.

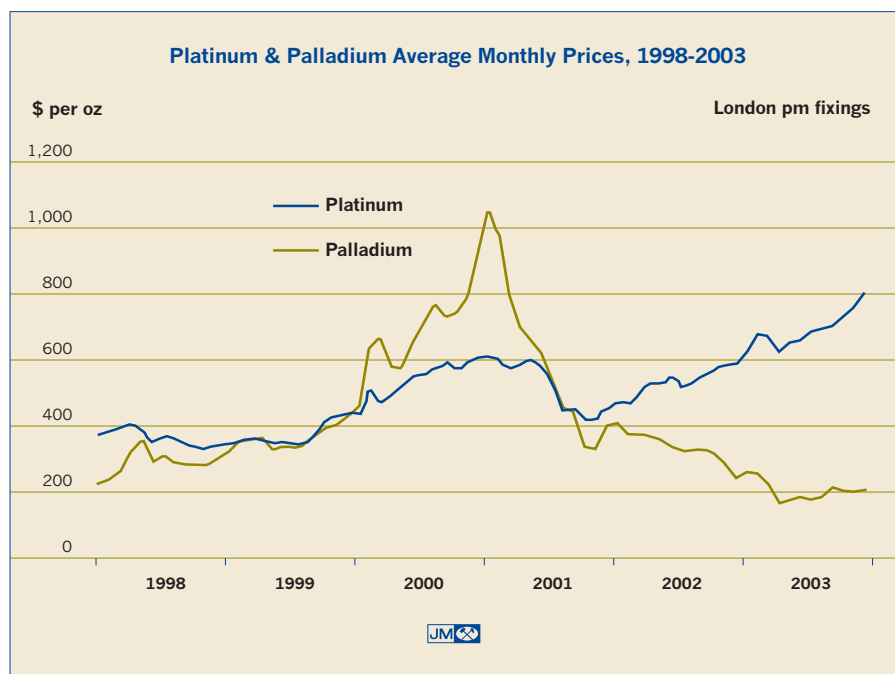
After falling by almost \$100 during March and April the price of palladium stabilised during **May**, consolidating between \$152 and \$164 from the 1st

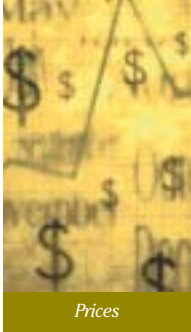
through to the 19th. Fund interest in the metal then perked up, possibly on expectations of an upturn in purchasing by the automobile sector. With physical demand improving and dealer short-covering evident, the price climbed from \$163 on the 19th to \$206 on the 27th. The rally, however, then subsided under the weight of increased producer selling and palladium ended May at \$183.

Palladium initially followed platinum upwards in **June**, rising to \$190 on the 3rd before light selling pressure took the price down to just under \$170 the following week. Steady fund buying of palladium on NYMEX then provided sufficient stimulus to push the price back up to \$186 by the 16th; thereafter the price settled down into a narrow trading range, fixing between \$173 and \$179 for the rest of the month.

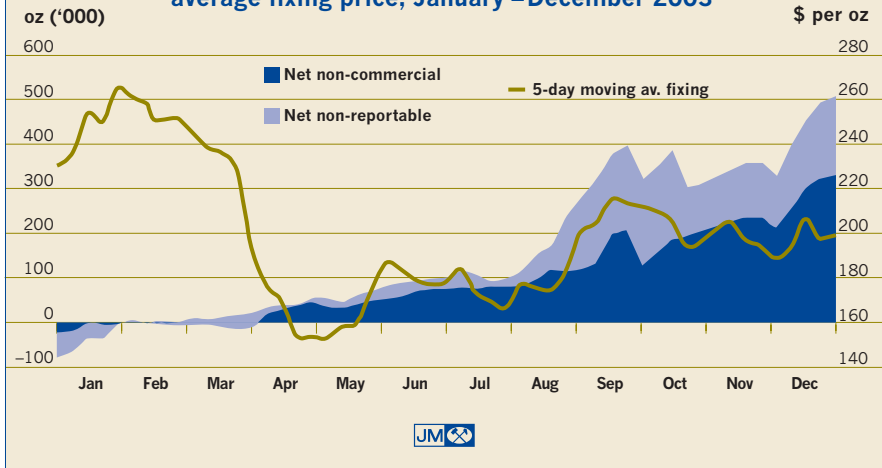
Further moderate fund buying of palladium on NYMEX lifted the price from \$180 on the morning of the 1st of **July** to \$188 on the afternoon of the 2nd in very thin trade. Fund interest in the metal then tailed off, cutting support from under the price. With physical demand deflated by the traditional summer slow-down, the price began to slide, following platinum downwards. Offers of metal found few buyers and the price dropped to \$170 on the afternoon of the 9th. After pausing between \$172 and \$175 for several days the downward trend continued, the price softening to \$160 by the 23rd. With volumes of both physical and futures trade thin, a slight upturn

Palladium Prices in 2003 London am and pm fixings, \$ per oz			
	High	Low	Average
Jan	271.00	234.00	254.93
Feb	266.00	243.00	253.23
Mar	242.00	180.00	224.85
Apr	180.00	144.00	162.75
May	206.00	152.00	167.10
Jun	190.00	169.00	179.49
Jul	188.00	160.00	173.26
Aug	205.00	171.00	181.76
Sep	232.00	192.00	210.89
Oct	214.00	184.00	201.36
Nov	208.00	188.00	196.85
Dec	209.00	187.00	198.19





Palladium - NYMEX net speculative positions versus average fixing price, January – December 2003



in activity on NYMEX then enabled the metal to recover to \$178 by the end of the month.

Physical trade in palladium was light during the first half of **August** and the price floated between \$170 and \$180 from the 4th through to the 19th. On NYMEX, however, funds started steadily building on their existing net long positions of around 80,000 oz. This was reflected in the spot price from the 20th onwards as the volume of palladium futures traded on TOCOM also increased sharply. From a fixing of \$176 on the 19th the price advanced swiftly to reach \$205 on the 26th. The rally was then capped by strong physical sales but the price was supported above \$200 by additional fund buying for much of the remainder of August. The net speculative long position on NYMEX tripled over the course of the month to approximately 240,000 oz.

Palladium continued to attract a strong degree of fund interest throughout **September**, the net speculative position on NYMEX reaching almost 400,000 oz, surpassing that of platinum. The fund buying of futures and options was sufficient to drive the palladium price from \$199 on the 4th to \$232 on the 9th. When the derivatives activity paused in mid-month, however, the price rapidly dropped under \$200, there being insufficient physical demand to provide much support.

The dip triggered a resumption of fund buying of palladium derivatives on both NYMEX and TOCOM, which boosted the price to \$219 on the 16th. The price then consolidated between \$210 and \$218 through to the 25th, but dipped again on the 26th as

the platinum and gold markets slipped. This time, however, the palladium price held above \$200 and the metal ended the month at \$209.

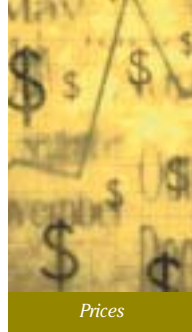
In early **October** the palladium price softened from around \$210 towards \$200 as good volumes of physical metal dampened the market. On the 14th a surge in offers of metal on the afternoon fixing sparked the start of several days of long liquidation as some funds switched from buying to selling. With no support from industrial purchasers of the metal the price slid under \$200 on the morning of the 15th then to \$184 on the afternoon of the 16th as stop-loss sell orders were triggered. The \$20 drop in the palladium price in two days attracted fresh fund buying back into the market and the price subsequently staged a moderate recovery that peaked at \$207 on the 30th.

Palladium traded uneventfully during the beginning of **November**, speculative buying being easily covered in the spot market, and the price held between \$202 and \$208 through to the 10th. The following day, long liquidation was seen from a single source and the morning fixing slipped to \$199 as a result. The price weakened further on the 12th but then steadied and traded dully for the remainder of the month, ending with a fixing of \$188.

Palladium managed to rally by \$20 to reach \$209 in early **December** on the back of further large buying of the metal by funds, primarily via NYMEX. This continued throughout the month, in contrast to the year-end profit-taking in platinum. However, despite the net speculative position increasing by 150,000 oz to over 500,000 oz on NYMEX over the course of the month, the physical market remained well supplied with metal. As bids for spot metal dried up towards the end of the year the palladium price drifted down, slipping to \$193 on the 31st. This was almost 18 per cent below the year's opening fixing of \$234 and a discount to platinum of \$621.

Other pgm

In 2003 the rhodium price worked through the final phases of a decline dating back to 2000 (when it peaked at \$2,600). After some moderate volatility during the first five months of the year, the market reached near equilibrium and the price stabilised at \$500 as a result. Multi-year declines in the prices of ruthenium and iridium also came to an end in 2003 as industrial demand for the metals improved.



After falling rapidly at the end of 2002 due to the large volumes of metal offered to the market, the price of rhodium rebounded in January 2003 as enquiries increased and availability contracted sharply. The Johnson Matthey base price surged from \$485 on the 7th to \$650 on the 10th before limited selling came back into the market and the price eased to \$620.

There was little further movement in the rhodium price until late February, when a sustained slide began that lasted through to the end of April. Demand from the key autocatalyst market was relatively soft, with vehicle production in the USA and Europe showing signs of slowing. Supplies of rhodium from South African producers, Russia, and secondary refiners were more than sufficient to meet market needs. As a result, the JM base price fell steadily from \$600 at the beginning of March to \$440 on the 28th April – its lowest level since February 1998.

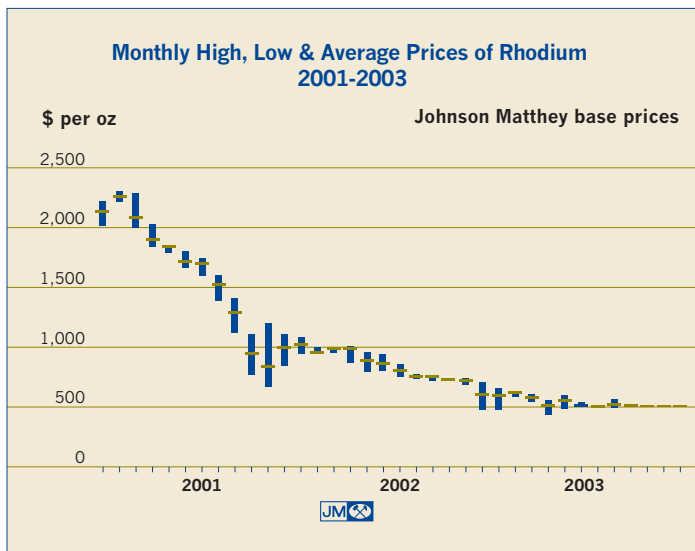
During the final two days of April, however, the market began to turn. The swift fall below \$450 stimulated increased buying interest and as the volume of bids increased the JM base price climbed back upwards during the first half of May, peaking at \$590 on the 13th.

Again, however, the rally was capped by increased offers of metal and with the selling momentum outweighing purchasing interest from the auto industry the price subsided to settle at \$500 on the 6th June. As the price dropped towards \$500, offers of metal were scaled back and improved buying support emerged. The rhodium market subsequently moved more closely into balance and entered a sustained period of price stability for the first time since 1999. Apart from a brief rally to \$560 in thin August trade, rhodium traded at, or very close to, \$500 for the remainder of the year.

The Johnson Matthey ruthenium base price was marked steadily lower during the first four months of 2003, dropping from \$40 at the beginning of January to a seven year low of \$30 at the end of April as plentiful supply outweighed soft demand. The price then edged back up to \$33 in May and stabilised at this level for the next five months.

In the final quarter of the year, improving demand in the electronics and industrial sectors finally fed through to the ruthenium price, which firmed from \$33 at the end of October to \$41 during November.

The Johnson Matthey iridium base price moved lower in line with the other minor pgm during January



2003, slipping from \$125 at the start of the year to \$100 by the middle of the month. The key electronics market for iridium crucibles showed signs of improving but primary supply remained in excess of demand and was supplemented by sales from the US National Defense Stockpile.

There was little activity in the iridium market until early April, when the price slipped by a further \$10 to \$90. As with rhodium and ruthenium, the market then appeared to reach equilibrium and the price remained unchanged through to the end of October. In contrast to ruthenium, however, the iridium price then softened again, edging down to \$87 at the start of November. The price then remained unchanged for the rest of the year.

