Summary and Outlook

Platinum

- **Demand** for platinum is forecast to edge up to a new high of 6.47 million oz in 2004, an annual increase of less than 1 per cent.
- Purchases of platinum for use in **autocatalysts** are projected to climb by 7 per cent to a record 3.43 million oz, propelled by higher diesel car sales in Europe and tighter emissions limits.
- Demand for platinum in **industrial** applications is expected to grow to 1.53 million oz, a rise of 9 per cent, driven by strong demand from the glass industry in Asia.
- **Jewellery** demand for platinum is forecast to drop by 10 per cent to 2.20 million oz as purchases by Chinese manufacturers fall for the second year in succession.
- **Supplies** of platinum are projected to reach 6.43 million oz in 2004, an increase of almost 4 per cent on the year before.
- After five years of significant deficits, the platinum market is set to move close to balance in 2004. Throughout much of the year to October, speculative buying gave strong support to the platinum **price**.

Platinum Supply and Demand
'000 oz

	2003	2004
Supply		
South Africa	4,630	4,980
Russia	1,050	850
North America	295	360
Others	225	240
Total Supply	**6,200**	**6,430**
Demand		
Autocatalyst: gross	3,210	3,430
recovery	(645)	(695)
Jewellery	2,440	2,200
Industrial	1,400	1,530
Investment	15	5
Total Demand	**6,420**	**6,470**
Movements in Stocks	**(220)**	**(40)**

Overview

Demand for platinum is forecast to rise by a little under 1 per cent in 2004 to 6.47 million oz. Purchases of platinum by the auto industry will increase strongly, the fifth successive year of growth, and industrial demand for the metal is also expected to climb. Against this, however, consumption of platinum in jewellery fabrication is projected to drop as Chinese manufacturers react to the strength of the price.

Supplies of platinum are expected to grow by 230,000 oz to 6.43 million oz. Much of the additional metal will come from the ongoing expansion of the South African platinum mining industry, and output in North America and Zimbabwe will also rise. With supplies increasing more rapidly than demand for the second year running, the platinum market will move close to a position of balance this year.

The price of platinum has been very firm during 2004 to date – a reaction to speculative buying of futures by funds and investors. This was primarily responsible for driving the price up from $815 at the beginning of January to a peak fixing of $937 in mid-April. After several short periods of profit-taking, renewed investor bullishness towards platinum, together with firm industrial demand, has helped to keep the price well above $800 since mid-July.

Purchases of platinum by the **autocatalyst** sector are projected to jump by 220,000 oz to 3.43 million oz in 2004. Higher European demand will result from the ongoing growth of diesel car sales, and an increase in average catalyst loadings in response to the approach of Euro IV emissions limits. Japanese autocatalyst demand for platinum will also rise as truck manufacturers launch models that meet new emissions regulations. In the USA, however, purchases of platinum will fall as auto companies continue to move towards greater use of palladium-based catalyst systems for gasoline vehicles.

Demand for platinum from the **jewellery** industry is forecast to drop by 240,000 oz to 2.20 million oz, the lowest total since 1997. After weakening in 2003, Chinese purchases will fall further this year as the jewellery industry has diverted production into other white metals. In Japan and the USA the large premium in the price of platinum relative to white gold is expected to see the latter gain some market share.

Demand for platinum in **industrial** applications is projected to strengthen by 130,000 oz to 1.53 million oz. A further expansion of LCD glass manufacturing capacity in Asia will lead the growth in demand, whilst purchases of platinum for use in catalysts for the chemicals industry and in electrical applications will also increase. Net sales of **investment** products are expected to shrink to just 5,000 oz this year.

Global **supplies** of platinum are forecast to expand by 230,000 oz to reach 6.43 million oz. Output in South Africa is expected to grow more rapidly this year than in 2003, despite temporary disruptions to production, as expansion projects deliver increasing volumes of metal. North American sales of platinum are also likely to be substantially higher as output at Inco, the largest producer, rebounds from the strike-affected low of 2003. Shipments of platinum from Russia, however, are forecast to fall as sales fall more closely in line with mine production.

The platinum **price** began 2004 strongly, climbing from an opening fixing of $815 on the 2nd of January to over $860 in mid-month. Funds and investors built up significant long positions in platinum on the NYMEX and TOCOM futures exchanges, part of a wider flow of investment capital into the commodities markets. At the same time, jewellery fabricators in China stepped up purchases of metal ahead of the country's New Year holiday.

After a brief round of profit-taking in late January, the price was again driven up by heavy speculative buying. The rally reached a peak of $937 in mid-April, a 24 year

high, before a wave of long liquidation across many commodities markets caused the platinum price to crash by $170 to $767 by early May. An upturn in demand for metal from end users then provided support, and as funds began rebuilding long positions the price began to strengthen again in a series of rallies. By September a base to the price had been established at around $830, with $875 marking the ceiling of a fairly wide trading range.

An increase in the amount of platinum available for lending, in part a function of the fund activity, resulted in short-term lease rates falling from around 8 per cent at the start of the year to less than 3 per cent by the end of September.

Supply

Supplies of platinum from South Africa are forecast to jump by 350,000 oz in 2004 to 4.98 million oz, in spite of a temporary suspension of mining at Northam and brief strikes at Anglo Platinum and Impala.

The growth in South African supplies will be led by Anglo Platinum, which expects to reach its target production of 2.45 million oz of platinum. This would represent a rise of 9 per cent over 2003. Projects on the western limb of the Bushveld Complex will account for much of the increase in output, notably the tailings reprocessing plant at Waterval.

Impala's mining operations on the western Bushveld are projected to yield just over 1 million oz of platinum this year, a similar rate of production to last year. Work at the company's developing Marula mine on the eastern Bushveld has been hindered by unexpectedly difficult geological conditions and Impala is implementing changes to the mining methods and mine plan as a result.

Platinum output from Lonmin's operations is likely to exceed last year's total of 933,000 oz; Aquarius Platinum's Kroondal and Marikana mines are both forecast to deliver higher volumes of pgm in concentrate; and production at Southern Platinum's Messina mine will continue to build towards full capacity. At Northam Platinum, however, a fatal fire in the mine in September led to the suspension of operations for several weeks, which will reduce pgm output for the year.

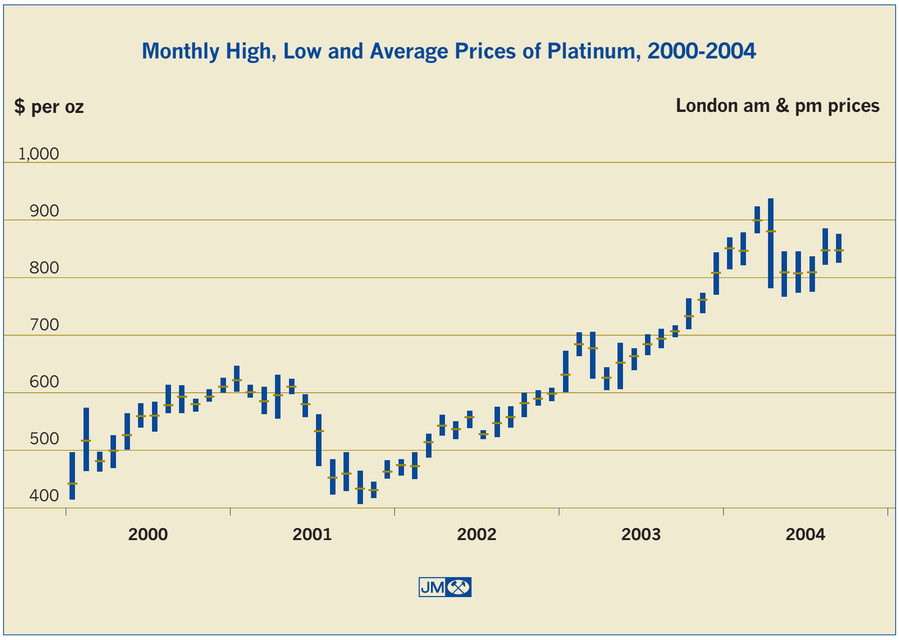
Russian sales of platinum are predicted to drop by 200,000 oz in 2004 to 850,000 oz. Norilsk Nickel should sell its full output of platinum but alluvial production in the far east of Russia is likely to weaken. More importantly, we do not expect a significant volume of metal to be sold from central stocks in 2004.

Supplies of platinum from North America are forecast to rise by 65,000 oz to 360,000 oz this year. The increase will be almost entirely due to greater output at Inco; the company suffered from a three month strike in 2003 which cut output and resulted in a large volume of pgm process inventory being carried over into the first quarter of 2004. Mine production of platinum in Zimbabwe is projected to rise slightly to 150,000 oz, both the Mimosa and Ngezi mines having reached their target production levels.

Demand

Purchases of platinum for autocatalyst manufacture are forecast to climb to a record total of 3.43 million oz in 2004, a rise of 220,000 oz. Another year of robust growth in demand in Europe will be responsible for the majority of the increase. Sales of diesel cars are continuing to expand rapidly and are projected to account for more than 47 per cent of new car registrations this year. The introduction of new diesel car models that meet forthcoming Euro IV emissions standards (which come into effect in January 2005) will also contribute to higher platinum demand: in many instances, catalyst loading levels have been raised in order to meet the tighter emissions limits and some models have been fitted with catalysed particulate filters.

Japanese autocatalyst demand for platinum is also



set to grow in 2004, rising by 30,000 oz to a forecast 530,000 oz. National regulations limiting emissions from heavy-duty diesel vehicles will come into effect in the second half of 2005, and all the major Japanese truck manufacturers have already launched new models that comply with the new standards. To achieve the necessary cuts in emissions, trucks will be fitted with diesel oxidation catalysts, plus, in some instances, a catalysed diesel particulate filter (DPF).

The retrofitting of catalysts or DPF to older trucks in Tokyo will have only a small positive effect on platinum demand in 2004. The Tokyo retrofit legislation applied from October 2003 and much of the necessary work was undertaken in the final quarter of that year.

In North America, auto makers will purchase less platinum in 2004 than the previous year, demand dropping by 50,000 oz to a projected 835,000 oz. This reflects the ongoing shift back to use of palladium-based catalysts on gasoline light vehicles by the big three US auto makers. This is now having a noticeable impact on platinum demand as old models are phased out and new vehicles are launched.

Platinum demand from the auto industry in the Rest of the World is forecast to increase by 20,000 oz to 475,000 oz. Light vehicle output in much of Asia (notably China, India and South Korea) and Latin America (Brazil and Argentina) is on course to expand and this, together with tightening emissions limits in several countries, will pull platinum demand upwards.

Demand for platinum used in jewellery fabrication is projected to drop by 240,000 oz to 2.20 million oz in 2004, due to a fall in the volume of metal purchased by Chinese manufacturers. The strength of the platinum price during much of the year to date has negatively affected the market in China in several ways and will result in demand falling by an estimated 20 per cent to 960,000 oz.

The surge in the platinum price to a peak fixing of $937 in mid-April was not reflected in the retail price of platinum jewellery in China, so profit margins throughout the trade fell to very low levels. Many manufacturers responded by cutting back production of platinum products and switching a greater proportion of their output to more profitable white gold jewellery. Some companies also began producing pieces in palladium.

The high platinum price also increased metal financing costs for manufacturers, who deferred purchases where possible and became less willing to offer product on consignment to wholesalers and retailers. In addition, this year has seen an upturn in the volume of old platinum jewellery stock being returned to fabricators for remelting into new designs. At the retail level, plain fashion platinum jewellery is facing increased competition from white gold but sales of bridal and diamond-set platinum jewellery are rising.

Demand for platinum in other jewellery markets is not expected to change greatly year-on-year. Japanese retail sales of platinum jewellery are set to fall again but less stock is likely to be recycled than last year, leading to a marginal rise in purchases of metal to 670,000 oz. In Europe, the UK platinum jewellery market is continuing to expand, and Swiss watch manufacturers have increased production; the Italian and German markets, however, remain weak.

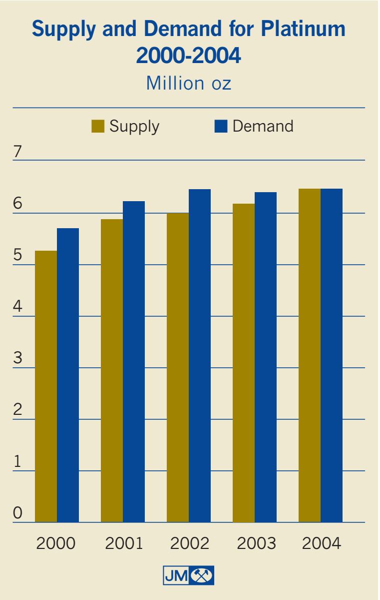
Sales of platinum jewellery at the upper end of the US market were relatively strong during the first half of the year but have since softened. In other sectors, however, the high price of platinum has resulted in the loss of sales to white gold. Purchases of metal for the year as a whole in North America are expected to fall by 5 per cent to 295,000 oz.

Industrial applications are forecast to consume 1.53 million oz of platinum in 2004, an annual increase of 130,000 oz. Use of the metal in chemical process catalysts and electrical applications will rise but the strongest growth will come from the glass industry.

Purchases of metal by glass producers are projected to reach 240,000 oz, up from 165,000 oz the year before. The growth will be centred in Asia, driven by the addition of substantial new LCD glass manufacturing capacity in Japan, Taiwan and South Korea. Conversely, net demand for platinum in North America will be slightly negative as the closure of several TV glass furnaces this year will result in significant sales of metal back to the market.

Demand for platinum from the chemicals industry is forecast to climb to 350,000 oz, up from 315,000 oz in 2003. The construction of new nitric acid manufacturing capacity will result in stronger orders for platinum catalyst gauze, whilst expansion of silicones and paraxylene plants will lead to higher demand for platinum-based catalysts.

In the electrical sector, rising sales of personal computers and other consumer electronics are fuelling increased production of hard disk drives, and shipments of high temperature thermocouples to a range of industries are also running ahead of last year.



Electrical demand for platinum, therefore, is projected to reach 280,000 oz, an increase of 20,000 oz.

Net purchases of investment coins and bars are forecast to diminish to just 5,000 oz this year. In Japan, the platinum price in yen climbed from less than ¥2,900 per gram at the start of the year to over ¥3,200 in March and April, leading to higher sales of investment bars back to the market. In both Japan and the USA, the high price of platinum has also resulted in reduced purchases of new bars and coins by investors.

Outlook

Global demand for platinum is expected to rise a little faster in 2005 than in 2004, led again by a strong performance from the European autocatalyst sector. Auto industry forecasts suggest that diesels will account for more than 50 per cent of new car sales in Europe next year – that would equate to total diesel cars sales of over 7.3 million vehicles. At the same time, the fitment of catalysed diesel particulate filters will accelerate, and average diesel oxidation catalyst loadings will rise further as a greater number of Euro IV compliant vehicles are produced.

In Japan, the heavy-duty diesel sector will boost autocatalyst demand for platinum for the third year in succession in 2005 due to the implementation of national emissions standards in October that year. In the Rest of the World, further growth in light vehicle production in Asia and Latin America is expected to contribute to higher autocatalyst use of platinum.

On the downside, the trend of US auto companies switching an increasing proportion of their light vehicle models to palladium-based catalysts is projected to result in a bigger drop in North American auto industry purchases of platinum in 2005 than this year.

A return to growth is forecast for demand for platinum from jewellery manufacturers next year but the increase is expected to be modest and will depend to a considerable extent on the price of the metal.

We believe that the overall availability of platinum will continue to improve in 2005, and if this results in a softening of the price then purchases by Chinese jewellery fabricators should turn upwards. Consumers remain keen to buy platinum jewellery and substantial parts of the Chinese market remain largely untapped, both in geographical terms and types of product. At the same time, the proportion of platinum jewellery priced on an individual basis rather than by weight is slowly rising and this will help to improve overall profit margins for the trade.

Purchases of platinum for jewellery manufacture are forecast to drop by 10 per cent to 2.20 million oz this year.

Retail sales of platinum jewellery in Japan, the USA and Europe will also be influenced by the metal's price and the pace of economic growth.

Growth in the use of platinum in industrial applications is forecast to slow in 2005. Another increase in demand from the electrical sector is expected as sales of products containing hard disks continue to climb. On the other hand, the pace of expansion of LCD glass capacity in Asia is expected to slow, so platinum purchases are unlikely to match this year's high level.

Platinum supplies are projected to expand more rapidly in 2005 than in 2004. Mines in South Africa should deliver further substantial growth in output; expansion programmes managed by Anglo Platinum will again be responsible for much of the forecast increase. North American and Zimbabwean production of platinum are also scheduled to rise, although the increases will be small by comparison. Little change is expected in the level of Russian sales of platinum which are anticipated to be close to the level of mine production.

Overall, we expect supplies of platinum to expand considerably faster than modest growth in demand in 2005. The platinum market is, therefore, forecast to move into a position of surplus for the first time in several years. With this in mind we expect platinum to trade between $760 and $880 over the next six months, with speculative activity likely to continue to have a substantial influence on daily movements in the price.

Palladium

- Palladium **demand** is forecast to continue its recovery in 2004, climbing by 13.5 per cent to 6.14 million oz.
- Purchases of palladium by the **auto** industry are projected to increase by 5.5 per cent to 3.65 million oz as US auto makers use less metal from inventories and global light vehicle output rises.
- The introduction of palladium **jewellery** in China is forecast to drive total purchases of the metal for jewellery fabrication up to 740,000 oz, an increase of almost 500,000 oz.
- Demand for palladium in **electronic** and **dental** applications is expected to improve modestly, whilst sales of small bars to private investors in North America have grown.
- **Supplies** of palladium are projected to rise by 11 per cent to 7.16 million oz in 2004 as more Russian metal enters the market and South African production continues to expand.
- With the exception of a fund driven rally in March and April, the palladium **price** was confined below $240 for much of the first nine months of 2004 by a market surplus that is forecast to exceed 1 million oz.

Palladium Supply and Demand
'000 oz

	2003	2004
Supply		
South Africa	2,320	2,570
Russia	2,950	3,300
North America	945	1,025
Others	245	265
Total Supply	**6,460**	**7,160**
Demand		
Autocatalyst: gross	3,460	3,650
recovery	(410)	(525)
Dental	825	840
Electronics	895	915
Other	640	1,260
Total Demand	**5,410**	**6,140**
Movements in Stocks	**1,050**	**1,020**

Overview

Global purchases of palladium are forecast to expand by 730,000 oz to 6.14 million oz in 2004 as the market continues to recover from the slump of 2002. A substantial proportion of the growth in demand will be due to Chinese jewellers moving into the production of palladium jewellery. Auto industry purchases of palladium will also increase this year.

Increasing mine production together with sales of large volumes of Russian metal from stock will push supplies up to 7.16 million oz. The surplus between supply and demand will exceed 1 million oz for the second year in succession.

Purchases of palladium for **autocatalyst** manufacture are forecast to increase by 190,000 oz to 3.65 million oz in 2004. US auto makers will buy more palladium this year as less metal will be drawn from inventories than in 2003. Palladium demand is expected to rise in Asia due to higher light vehicle production and tightening emissions regulations, but will fall in Europe as gasoline vehicle output contracts.

Demand for palladium from the **electronics** industry is projected to improve to 915,000 oz this year, up from 895,000 oz in 2003. Use of palladium in other applications will climb dramatically this year due to a surge in **jewellery** demand for the metal. A number of Chinese manufacturers began producing palladium jewellery during the first quarter of the year and so purchases of the metal jumped. Total jewellery demand for palladium is forecast to climb from 250,000 oz in 2003 to 740,000 oz this year.

Supplies of palladium are set to be boosted by 700,000 oz in 2004, driven up by sales of metal from inventory by Stillwater Mining Co. and by higher mine production in South Africa and North America.

The palladium **price** has spent much of the year to date between $200 and $240. The exception was a rapid escalation to a high of $333 on the 13th of April, which resulted from funds and investors building very large net long positions in palladium derivatives. Although the volume of metal offered via the London fixings jumped in response, the weight of fund buying pushed the price upwards.

The rally was short-lived, however, and came to a sudden end when funds started taking profits across a range of commodities markets. Palladium fell from a fixing of $333 on the 13th of April to $237 on the 29th. After a volatile period of trading during May and early June, palladium settled into a $200 to $230 range.

Supply

Sales of Russian palladium are forecast to total 3.30 million oz in 2004, an annual increase of 350,000 oz. Stillwater Mining Co. will deliver around 375,000 oz of palladium to end users this year from the inventory of over 877,000 oz that it received from Norilsk Nickel as part payment for a majority shareholding in 2003. Norilsk Nickel itself intends to sell its full mine production of palladium but shipments of palladium from centrally held stocks in Russia are expected to fall.

South African supplies of palladium are projected to climb by 250,000 oz to 2.57 million oz as almost all of the pgm producers will expand output. In North America, Inco's output of palladium will jump following last year's dip, and North American Palladium is also on course to produce more metal.

Demand

The forecast growth in purchases of palladium for autocatalyst manufacture from 3.46 million oz in 2003 to 3.65 million oz this year will largely be due to a reduction in the volume of metal used from inventories in the USA. However, the consumption of palladium in autocatalysts in North America will continue to decline as thrifting programmes further reduce the average loading per catalyst.

In Asia and the Rest of the World, rising light vehicle output and tightening emissions standards will lead to a modest rise in palladium demand. In Europe, production of gasoline light vehicles will drop as diesel cars gain additional market share, leading to a fall in purchases of palladium.

Demand for palladium from the electronics industry is projected to increase to 915,000 oz, up by less than 2 per cent from 2003. Increased output of hybrid integrated circuits (HIC) and greater consumption of palladium in plating applications will spur demand for the metal. However, demand for palladium in multi-layer ceramic capacitors (MLCC) will fall, despite rising sales of components, due to ongoing thrifting and miniaturisation.

In 2003, the principal use of palladium in jewellery was as a component of white gold alloys. During the first quarter of this year, however, Chinese jewellers began fabricating significant volumes of palladium jewellery. Because of this, purchases of palladium by the Chinese jewellery sector are forecast to jump from 25,000 oz to 510,000 oz in 2004.

The move into palladium jewellery production was driven by falling margins on platinum jewellery in China as the price of the metal surged above $900. A number of manufacturers cut back fabrication of platinum products and diversified into palladium. Purchases of the metal climbed as wholesalers and retailers established stocks of palladium jewellery.

The use of palladium in dental alloys and other industrial applications is expected to be stable in 2004. However, investment demand for palladium is forecast to climb to 150,000 oz. A substantial volume of small bars was purchased during the first quarter of the year by North American investors when the price was rising.

Outlook

Auto industry demand for palladium is forecast to grow slightly faster in 2005 than this year. In the USA switching from platinum-based catalysts to palladium formulations on gasoline vehicles will continue, and the negative effects of recent thrifting programmes on palladium consumption will begin to diminish.

Autocatalyst demand for palladium in the Rest of the World should continue to rise steadily in 2005. Conversely, in Europe another fall in gasoline vehicle output, as diesel sales rise further, is expected to reduce auto industry purchases of palladium.

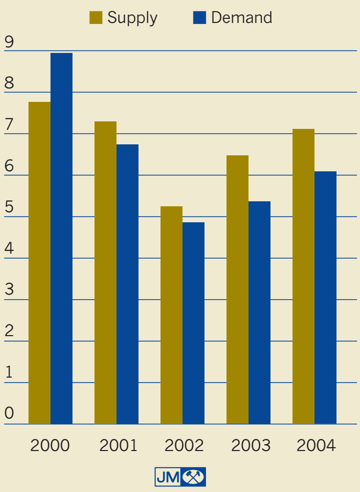
In the electronics industry, further good growth in demand is expected from the HIC and plating markets. MLCC demand for palladium is expected to turn upwards but any increase will be slight as thrifting and miniaturisation continue.

We believe that palladium purchases by Chinese jewellery companies in 2005 are unlikely to reach the level of demand seen this year, which was heavily boosted by initial stock building of product throughout the trade. The extent to which manufacturers commit fabrication capacity to palladium jewellery will depend partly on its profitability relative to platinum.

Supplies of palladium are forecast to grow again next year as production from pgm expansion projects in South Africa continues to build. Shipments of palladium from Russia are likely to continue at a rate close to mine production but Stillwater Mining Co. plans to deliver an increased volume of palladium to end users from the inventory it acquired from Norilsk Nickel. The recovery of palladium from autocatalysts is also expected to continue to rise strongly next year.

In summary, we forecast another year of improving palladium demand from auto makers and other industrial end users in 2005, but expect purchases of metal by Chinese jewellery fabricators to fall. With supplies projected to grow solidly, the palladium market will remain in very considerable surplus. Therefore, unless there is further speculative buying, downward pressure on the price will increase. On balance we expect the price of palladium to trade between $160 and $250 for the next six months.

Supply and Demand for Palladium 2000-2004
Million oz



Monthly High, Low and Average Prices of Palladium, 2000-2004