Platinum

Autocatalyst

Purchases of platinum by the global autocatalyst industry are forecast to rise by 7 per cent in 2004 to 3.43 million oz. The continuing growth of diesel car sales and greater control of diesel emissions in Europe is instrumental in driving demand for platinum higher. Demand is also being stimulated by the imminent introduction of new heavy-duty diesel emissions regulations in Japan, as well as by expanding light vehicle production in Asia. In the USA, however, auto industry purchases of platinum are expected to fall as the proportion of vehicle models utilising palladium-based autocatalysts increases.

Europe

European autocatalyst demand for platinum is forecast to surge by 16 per cent to 1.59 million oz in 2004. Sales of diesel powered cars in Europe are set to climb to a record high and this will account for a substantial proportion of the increase in platinum consumption.

Diesels are likely to account for more than 47 per cent of all new car registrations in Europe this year, or approximately 6.83 million vehicles, up from a 43 per cent market share in 2003. Rising fuel costs have reinforced the attraction of diesel cars, which tend to be much more fuel efficient than gasoline models.

Tightening emissions standards for light-duty diesel vehicles will also contribute to the rise in platinum demand via higher average loadings and the use of particulate filters. The next stage of European vehicle emissions legislation (Euro IV) comes into effect for new models in January 2005. In many instances the necessary reductions in carbon monoxide and particulate emissions for diesel cars have been achieved by increasing oxidation catalyst platinum loadings.

In addition, to meet Euro IV some auto makers have had to introduce diesel particulate filters (DPF) as standard on their larger, heavier diesel models. At the same time, a significant minority of car buyers in Europe are choosing to pay to have a DPF fitted to their vehicles as an optional extra, even though one may not be required to meet the tighter emissions limits.

A substantial proportion of particulate filters currently installed on diesel cars are not catalysed with platinum; however, platinum-based DPF offer a number of technical advantages and their use is expected to accelerate from 2005 onwards.

Japan

Japanese auto makers are forecast to purchase 530,000 oz of platinum in 2004, a 6 per cent increase on the year before. The growth will be due to the introduction of new truck models that meet forthcoming national heavy-duty diesel emissions regulations, as well as to higher light vehicle output.

New emissions standards for heavy-duty diesel vehicles come into force nationwide in Japan in October 2005. All of the leading truck manufacturers in Japan have introduced new models that meet the 2005 standards and many are ramping up production ahead of the legislation deadline faster than previously anticipated. In order to meet the tighter emission limits, trucks generally require at least one diesel oxidation catalyst. Catalysed diesel particulate filters are also fitted to some models, and a number of the heaviest vehicles with large engines will utilise two oxidation catalysts plus a DPF. Consequently, the new heavy-duty diesel legislation will result in a significant rise in platinum demand this year.

The introduction of legislation in Tokyo requiring truck operators to retrofit older vehicles with oxidation catalysts or DPF resulted in a substantial rise in demand for platinum last year. Although some retrofitting continued into 2004, the impact on platinum demand will be relatively small.

Sales of passenger cars in Japan were marginally ahead of the previous year during the first eight months of 2004. Car production, on the other hand, was up by approximately 3 per cent over the same period, led by strong export sales, contributing to higher autocatalyst demand for platinum.

North America

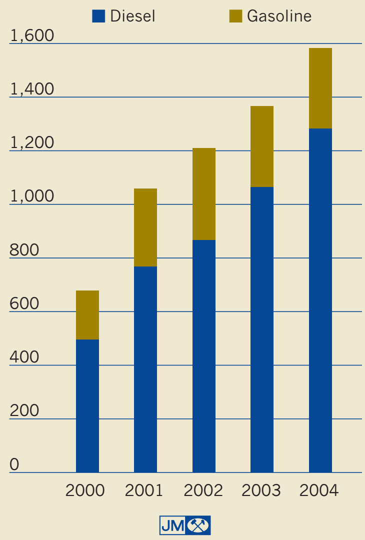
Purchases of platinum by the North American auto industry are projected to fall to 835,000 oz in 2004, a decline year-on-year of almost 6 per cent as the move towards replacing platinum-based catalysts with palladium-based products accelerates.

The pattern of pgm use has been complicated by several other trends that have reduced the effects of the move towards palladium-based catalyst formulations on platinum demand. Firstly, production and sales of light trucks and SUVs (sports utility vehicles) have continued to rise in the USA this year, both in absolute terms and as a proportion of overall light vehicle sales. Some of these models still use catalysts with a significant loading of platinum.

Platinum Demand: Autocatalyst
'000 oz

	2003	2004
Europe	1,370	1,590
Japan	500	530
North America	885	835
Rest of the World	455	475
Total	**3,210**	**3,430**

European Demand for Platinum in Autocatalysts 2000-2004
'000 oz



Purchases of platinum by Chinese jewellery manufacturers are forecast to fall below 1 million oz this year.

The phasing in of federal Tier 2 vehicle emissions standards in the USA from the beginning of this year has also had a small but positive impact by raising average catalyst pgm loadings. Finally, the volume of heavy-duty diesel retrofit business in the USA continues to rise steadily (albeit from a low base), as a growing number of organisations embark on initiatives to reduce the environmental impact of their vehicle fleets.

Rest of the World

Autocatalyst demand for platinum in the Rest of the World is expected to rise to 475,000 oz in 2004, an increase of 4 per cent. Much of the growth this year will be due to increased vehicle production in Asia and Latin America, together with the ongoing tightening of emissions limits.

The rate of growth in the Chinese car market has slowed in 2004 compared with the remarkable increase seen in 2003, primarily due to the introduction of widespread restrictions on consumer credit. Nevertheless, growth remains robust – based on data for the first nine months of the year, Chinese light vehicle production and sales are forecast to increase by around 12 per cent during 2004, reaching 4.4 million and 4.6 million vehicles respectively.

The tightening of vehicle emissions standards in China is following a rapid timetable as the government seeks to cut pollution and improve air quality, particularly within the Beijing conurbation. Regulations are following the European model: Euro II equivalent standards were introduced in Shanghai and Beijing in 2003 and were applied to cars nationwide in July this year; Euro III standards will follow in Beijing in 2005 and across the country from 2008 onwards.

Light vehicle sales are also expected to show good rates of growth in India, Thailand and Malaysia this year; vehicle production in South Korea is on course to recover from a poor 2003, driven by strong export sales; and emissions standards continue to tighten across much of the region. For example, Thailand implemented Euro III equivalent standards in 2003, South Korean emission limits will become more stringent in January 2005, and India will enforce Euro III limits in several major cities from next year.

Autocatalyst Recovery

The volume of platinum recovered from recycled autocatalysts will continue to grow in 2004, reaching an estimated 695,000 oz. Higher volumes of metal are expected to be recovered in all major regions except Japan, where catalyst collection rates appear to have reached a plateau.

European recovery will again show the fastest rate of growth, in line with rapidly improving collection rates and the increasing proportion of scrapped vehicles that are fitted with catalysts. In North America, greater competition for scrap catalysts has also resulted in higher collection rates, helped by the increased price of platinum. The same is true of South America and parts of Asia, where the volume of catalysts removed from scrapped vehicles before shredding has increased.

Platinum Demand: Autocatalyst Recovery
'000 oz

	2003	2004
Europe	(110)	(140)
Japan	(60)	(60)
North America	(425)	(440)
Rest of the World	(50)	(55)
Total	**(645)**	**(695)**

Jewellery

Purchases of platinum for jewellery manufacture are forecast to fall by 10 per cent in 2004 to 2.20 million oz, the lowest level of demand for seven years. The drop will be due to a sharp fall in purchases by the Chinese jewellery trade, which is largely a consequence of the strength of the platinum price. Demand in Europe is expected to be flat but will weaken in the USA due to greater competition from white gold. Purchases of platinum by Japanese jewellers may increase marginally as less stock is recycled.

Europe

Total European jewellery demand for platinum is projected to be unchanged in 2004 at 170,000 oz. This, however, masks significant changes in individual countries – good growth in UK demand and Swiss exports, but a weak market in Germany and the transfer of some platinum jewellery fabrication from Italy to South Africa.

In the UK, platinum continues to gain market share in the bridal jewellery sector, benefiting from both the strengthening trend towards white jewellery and increased consumer awareness of platinum. The weight of platinum items submitted for hallmarking between January and September climbed by 12.5 per cent to almost 70,000 oz.

In contrast, platinum is forecast to lose further ground in the German market to competing, lower priced metals, including white gold, stainless steel and titanium. In Italy, demand for platinum jewellery remains solid in the bridal and upper end of the market but the strength of the platinum price has increased the pressure from alternative materials.

Although some Italian jewellery manufacturers have reported increased export sales to the USA, the UK and Asia to date in 2004, purchases of platinum are expected to drop compared with 2003 due to the establishment of Silplats in South Africa. This is a platinum jewellery manufacturing joint venture established by the Italian jewellery company Silmar, Impala Platinum and BAE Systems-SAAB. Silmar will source a proportion of its platinum jewellery range from Silplats and market the jewellery through its global sales network.

Demand for platinum from the Swiss jewellery industry is expected to increase in 2004 following a relatively subdued 2003. Production and exports of platinum Swiss watches during the first eight months of this year increased, and sales of other platinum jewellery items were also higher year-on-year. Consumer spending on luxury brand name jewellery in particular has strengthened in the key Swiss export markets of the USA and Hong Kong.

Japan

Japanese demand for platinum in jewellery is expected to be virtually unchanged at 670,000 oz in 2004. Although retail sales of platinum jewellery are forecast to drop further, less platinum will be recycled from stock. Jewellery manufacturers, wholesalers and retailers in Japan have continued to minimise platinum inventories as far as possible but, given the high rates of stock reduction seen over the last two years, the volume of metal returned for re-fabrication has started to fall. Consequently, purchases of metal by manufacturers are likely to edge upwards.

Retail sales of platinum jewellery in Japan are forecast to drop by 10 per cent in terms of the number of items this year. The high price of platinum relative to white gold is leading to the latter gaining an increased share of the total precious metal jewellery market. The picture, however, is mixed – in certain sectors of the market platinum sales have actually increased, with positive trends noted in demand for some mid-range fashion rings and necklaces as consumer confidence and spending has improved.

North America

Demand for platinum from the jewellery market in North America is forecast to weaken by 5 per cent in 2004 to 295,000 oz. Retail sales of platinum jewellery in the upper end of the market were relatively strong during the first half of the year, and a number of luxury brand names launched new platinum ranges. However, sales softened over the summer and retailers are now more cautious about the outlook for the year as a whole. In the mid and lower-priced product brackets the high cost of platinum has resulted in the loss of some market share to white gold.

Rest of the World

Platinum demand for jewellery fabrication in the Rest of the World is projected to drop by 18 per cent for the second year in succession to 1.065 million oz in 2004. As in 2003, the fall will be due entirely to lower purchases by Chinese jewellery manufacturers, which are forecast to drop by 20 per cent to 960,000 oz, the first time that demand will have fallen below 1 million oz since 1999.

A number of interrelated factors have contributed to weaker Chinese demand for platinum this year, most of which are linked to the price of the metal. The platinum price rallied by more than $120 between the beginning of January and mid-April this year. However, increases in platinum jewellery prices lagged behind, a reflection of the high degree of competition amongst Chinese retailers. The resulting erosion of profit margins on platinum jewellery encouraged a number of manufacturers to diversify into the production palladium jewellery and increase their output of white gold – margins on both being higher than for platinum. Output of platinum products consequently fell.

The strength of the platinum price during 2004 to date has also provided the motivation for manufacturers, wholesalers and retailers to reduce their platinum jewellery stock levels, resulting in an upturn in the volume of metal returned for remelting. Nevertheless, inventories remain significant throughout the jewellery trade, which gives manufacturers the flexibility to defer metal purchases when the price of platinum rises quickly. In addition, the number of consumers trading-in existing platinum rings or chains in part exchange for new pieces of platinum jewellery has begun to rise.

The competition from white gold, particularly in the lightweight chain and plain fashion ring sectors of the market, has intensified this year as a result of both the greater price difference between the two metals and increased promotion of white gold jewellery. Sales of platinum bridal jewellery and diamond-set rings, however, have expanded and both offer better profit

Platinum Demand: Jewellery
'000 oz

	2003	2004
Europe	170	170
Japan	665	670
North America	310	295
Rest of the World		
China	1,200	960
Other	95	105
Total	**2,440**	**2,200**

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Platinum

margins than plain platinum jewellery.

Demand for platinum for jewellery fabrication elsewhere is expected to rise modestly in 2004; the Indian market for platinum jewellery continues to develop slowly, whilst the establishment of Silplats will generate new demand in South Africa.

Industrial

Industrial demand for platinum is forecast to rise by 9 per cent to 1.53 million oz in 2004. Purchases of platinum by the glass industry will jump, reflecting the rapid expansion of LCD glass manufacturing capacity in Asia, whilst demand for platinum-based catalysts from the chemicals industry will also rise as new production capacity comes on stream. Purchases of platinum for use in electrical applications will strengthen on the back of increased shipments of hard disks for computers and other electronic goods.

Platinum Demand: Industrial
'000 oz

	2003	2004
Chemical	315	350
Electrical	260	280
Glass	165	240
Petroleum	150	150
Other	510	510
Total	**1,400**	**1,530**

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Surging demand for high quality glass used in LCD panels for televisions, computer monitors and hand-held electronic products has resulted in several new LCD glass furnaces being constructed or commissioned in 2004. This will result in a jump in demand for platinum-based production equipment, and so purchases of platinum by the glass industry are forecast to expand by 45 per cent to 240,000 oz. The majority of this metal is destined for plants in Japan, South Korea and Taiwan. Net demand in North America, however, will be negative this year due to the sale of metal back to the market following the closure of the three remaining television glass manufacturing plants in the USA.

Consumption of platinum in chemical applications is forecast to climb to 350,000 oz in 2004, a year-on-year increase of 11 per cent. Higher production of silicones in Europe and North America, coupled with investment in new paraxylene manufacturing capacity in Asia, will lead to increased demand for platinum-based catalysts. Purchases of platinum catalyst gauze for nitric acid production are also projected to expand in 2004, in contrast to the depressed demand recorded the previous year. Construction of new nitric acid manufacturing capacity in Asia and parts of the Middle East has led to a rise in gauze demand, whilst the level of orders for replacement catalysts from existing plants has also risen.

Demand for platinum used in electrical applications is expected to grow in 2004 to 280,000 oz due to rising production of hard disk drives and greater sales of high-temperature thermocouples to the steel, glass and semiconductor industries. Shipments of hard disk drives climbed strongly during the first nine months of this year, fuelled by a marked upturn in retail sales of computers and other electronic products. This led to a rise in platinum demand, although the impact was dampened somewhat by an overhang of hard disk inventories that was carried over from the end of 2003. Demand for platinum in fuel cells continues to grow as output of developmental products increases, but the total volume of metal used remains small.

Little change in demand is forecast for most other industrial applications for platinum, including platinum-based petroleum reforming catalysts and dental alloys. The exception is the use of platinum in biomedical equipment, which is growing due to the increased use of implantable cardioverter defibrillators in the treatment of patients with heart problems in North America.

Investment

Net demand for platinum investment products is forecast to fall to just 5,000 oz in 2004. The surge in the price of platinum to over ¥3,200 per gram in Japan during the first quarter of the year led to substantial sales of large investment bars back to dealers and a lower rate of new purchases. Sales of platinum coins by the US Mint are expected to fall, also as a result of the strength of the platinum price.

Platinum Demand: Investment
'000 oz

	2003	2004
Coins and small bars		
Europe	0	0
Japan	5	5
North America	25	20
Rest of the World	0	0
	30	**25**
Large bars in Japan	**(15)**	**(20)**
Total	**15**	**5**

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The sale of platinum investment bars back to dealers by Japanese investors increased during the first quarter of this year as the platinum price climbed from less than ¥2,900 per gram at the beginning of January to over ¥3,200 per gram in March and April. At the same time, fewer new bars were purchased under personal accumulation plans. Disinvestment is forecast to outweigh new purchases by 20,000 oz over the course of the year.

Demand for the US Mint's Platinum American Eagle bullion coins during the first nine months of 2004 totalled just 13,900 oz, down from 15,850 oz during the same period the previous year. The strength of the platinum price has clearly deterred some buyers, while sales back to the market are expected to increase year-on-year. Sales of platinum proof coins are also forecast to weaken. Net demand for platinum investment in North America, therefore, is projected to slip to 20,000 oz.