PLATINUM QUARTERLY

Q1 2016

16th May 2016

Contents

FOREWORD

I am delighted to bring you the seventh edition of our growing *Platinum Quarterly* data set at the start of London's 2016 Platinum Week. More importantly, we publish our latest findings at a time when the price of this most precious of metals has strengthened from the unjustified low seen in late 2015.

As many of you who work in the precious metals industry and markets will know, the last few years have been challenging, to say the least. However, there are now an increasing number of reasons to be cheerful, including recognition by a growing number of market participants of the solid long-term fundamentals behind platinum.

At times I've felt like a broken record detailing to the media and other stakeholders why the World Platinum Investment Council saw little fundamental evidence to support platinum's price decline. Other metals with falling prices were in surplus. The impact of short-term trading of gold and platinum on the platinum price continues but there are early signs of this reducing. Platinum's anomalous discount to gold has almost reached its longest duration in 40 years. Despite some continuing headwinds, fuelled substantially, to date, by what we consider to be imbalanced analysis and commentary, our metal is in good shape. We maintain our commitment to provide objective data and insights.

Today we observe a strengthened price on the back of four years of market deficits. Additionally, the report we commissioned from Glaux Metal last year indicates we can expect another five deficit years beyond 2016.

Make no bones about it: the fundamentals behind platinum are strong and will remain strong for the foreseeable future.

Platinum Quarterly

Reinforcing this point, today's *Platinum Quarterly* shows that the supply and demand fundamentals of the platinum market continue to tighten.

SFA Oxford's painstaking data gathering and analysis of the global platinum market forecasts that for the full year 2016 the market will be in a 455 koz deficit, a significant increase from the 135 koz deficit initially predicted in March this year. As the report details, the revision to the full year forecast is due to a combination of lower supply and higher demand projections for the full year 2016.

Estimates for the amount of total mining supply and recycling have been scaled back by 230 koz, while the total demand outlook has increased largely as a result of higher levels of investment demand.

Automotive demand is forecast to be down by around 1%, slightly lower than in 2015, while jewellery consumption is expected to increase by 1% as weakness in Chinese jewellery purchases is offset by growing requirements elsewhere, particularly India.

Analysis of the first quarter of 2016 shows that total platinum supply fell by 11% compared to the previous quarter, a fall that can be largely attributed to a decline in South African refined output caused by a temporary closure.

Global platinum demand rose by 10% quarter-on-quarter despite an 11% fall in jewellery demand and a 6% fall in industrial usage. Automotive demand grew by 2% while investment demand enjoyed a positive quarter.

Given the WPIC's focus on investment, it is pleasing to observe SFA Oxford's increased forecast for investment demand in 2016. Demand for bars and coins was again particularly strong in Japan during the first quarter of the year, with retail buyers identifying and acting upon the opportunity to buy platinum at historically low price levels. This trend continued despite the recent rising price as the Yen price of platinum remains low, is still below that of gold and there are concerns for sustained negative nominal interest rates.

While pleasing, it is important not to read too much into a single quarter's worth of data. We will have a better understanding of the longer-term buying strength at the end of next quarter.

This leads me to another important point. When the WPIC was created in November 2014, one of our key goals was to help improve understanding of the platinum market. Today's publication of Q1 data for 2016 is a significant milestone on this journey. I say this because we now have the necessary quarter-on-quarter comparisons to help us better understand seasonality.

As the data set grows and as missing pieces of the platinum jigsaw are unearthed through SFA Oxford's continuous research, the quality of the data will improve further and become even more valuable, helping both market participants and those considering platinum as an investment to make informed decisions.

Market Development

Alongside the announcement of today's PQ data, we can further appraise you of our ongoing market development activities in 2016.

Market development is critical – supporting the growth of the physical platinum investment market in all parts of the world sits at the core of the WPIC's reason for being.

Just last week we announced the expansion of our partnership with Valcambi, the precious metals refiner, to increase the availability of platinum bar and coin products for the global retail market.

This exciting relationship sees the WPIC act as Valcambi's funding, stocking and marketing partner; utilising the refiners' core dealer and secondary networks – with a particular focus on the US retail market, where it is apparent there is significant demand for physical platinum products. Sufficient platinum product has not been available to date.

The Valcambi partnership comes on the back of a growing list of new relationships initiated and supported by the WPIC, which include: Rand Merchant Bank; Singapore Bullion Market Association (SBMA); and the Austrian Mint.

Japanese bar and coin buying is a welcome signal and we have plans in place to further support local efforts in Japan to satisfy and stimulate demand as it continues to grow.

While we look forward to announcing new relationships and product introductions very soon, the leadership team continues to spearhead efforts to promote understanding of platinum.

Investor Perspectives

We are engaging with new investor organisations and institutions to learn how best to make our existing communication activities more effective and offer additional support in new areas.

I think it is also worth adding that since the turn of the year we have noticed a marked increase in the number of investors, including family offices and central banks, seeking to engage with us and better understand the opportunities platinum affords. We hope this continues.

Indeed, I think it is worthwhile highlighting a very enlightened and interesting conversation that I recently had with a family office that is considering investing in platinum.

At the heart of the conversation was not, as perhaps some might expect, questions about the short term fluctuations in the price of platinum, but rather focus on the role platinum will play in addressing many of the key long-term technological challenges facing the world. In particular, platinum's 'green credentials' and its role in addressing climate change through wider adoption of fuel cell technology was of great interest – a topic that we will provide detailed thematic research on in the latter part of 2016.

This focus on the long-term potential of our metal shows, while others may waver, the importance of us sticking to our guns and maintaining conviction in our assertions and beliefs.

We look forward to sharing more data, presenting new research and announcing more market development initiatives in the coming months.

Thanks again for your support.

Paul Wilson, CEO

Table 1: Supply, demand and above ground stocks summary

	2013	2014	2015	2016f	2016f/2015 Growth %	Q4 2015	Q1 2016
Platinum Supply-demand Balance (koz)							
SUPPLY							
Refined Production	**6,070**	**4,880**	**6,150**	**5,895**	**-4%**	**1,610**	**1,190**
South Africa	4,355	3,115	4,465	4,210	-6%	1,190	785
Zimbabwe	405	405	405	430	6%	110	100
North America	355	400	385	390	1%	100	95
Russia	740	740	715	675	-6%	160	160
Other	215	220	180	190	6%	50	50
Increase (-)/Decrease (+) in Producer Inventory	-215	+350	+45	+100	122%	-40	+150
Total Mining Supply	**5,855**	**5,230**	**6,195**	**5,995**	**-3%**	**1,570**	**1,340**
Recycling	**1,985**	**2,040**	**1,710**	**1,805**	**6%**	**375**	**395**
Autocatalyst	1,120	1,255	1,190	1,305	10%	270	280
Jewellery	855	775	515	495	-4%	105	115
Industrial	10	10	5	5	0%	0	0
Total Supply	**7,840**	**7,270**	**7,905**	**7,800**	**-1%**	**1,945**	**1,735**
DEMAND							
Automotive	**3,150**	**3,280**	**3,445**	**3,425**	**-1%**	**855**	**875**
Autocatalyst	3,010	3,130	3,295	3,265	-1%	820	835
Non-road	145	150	145	150	3%	40	40
Jewellery	**2,945**	**3,000**	**2,880**	**2,895**	**1%**	**675**	**600**
Industrial	**1,520**	**1,550**	**1,630**	**1,585**	**-3%**	**405**	**380**
Chemical	540	570	595	590	-1%	120	145
Petroleum	115	65	160	125	-22%	40	15
Electrical	190	190	150	150	0%	35	35
Glass	155	180	165	115	-30%	50	40
Medical and Biomedical	235	240	250	255	2%	75	60
Other	285	305	310	350	13%	85	85
Investment	**935**	**150**	**265**	**350**	**32%**	**-105**	**155**
Change in Bars, Coins	-5	50	485			210	140
Change in ETF Holdings	905	215	-240			-345	-25
Change in Stocks Held by Exchanges	35	-115	20			30	40
Total Demand	**8,550**	**7,980**	**8,220**	**8,255**	**0%**	**1,830**	**2,010**
Balance	**-710**	**-710**	**-315**	**-455**	**44%**	**115**	**-275**
Above Ground Stocks 4,140*	**3,430**	**2,720**	**2,405**	**1,950**	**-19%**		

Source: SFA (Oxford). *As of 31st December 2012. NB: Numbers have been independently rounded.

Notes:
1. All estimates are based on the latest available information. They are subject to revision in our subsequent quarterly reports in the event that additional information is identified.

2. The WPIC did not publish quarterly estimates for 2013 or the first two quarters of 2014. However, quarterly estimates from Q3 2014 to Q3 2015 are contained in previously published PQs which are freely available on the WPIC website.

3. The 2016 forecast is based on historical data and trends as well as modelling, with varying degrees of accuracy depending upon the supply or demand category. Investment demand is expected to be the least predictable segment. Some historical views are based on data and modelling that pre-date WPIC publication of PQ.

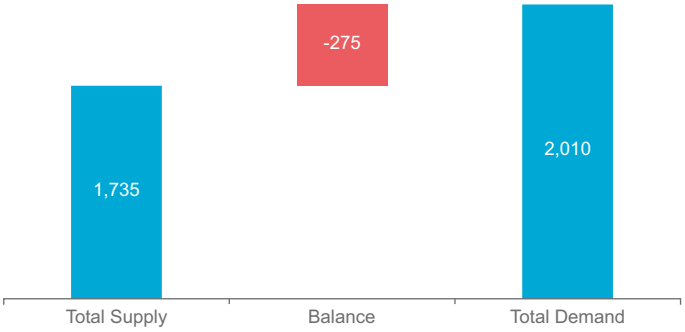
2016 FIRST QUARTER PLATINUM MARKET REVIEW

Total platinum supply fell 210 koz (-11%) quarter-on-quarter to 1,735 koz, with total mining supply slipping 230 koz and recycling growing by only 20 koz. Refined production fell 420 koz quarter-on-quarter owing to a decline in South African refined output caused by a temporary refinery closure, the effect of which was not totally offset by sales of 150 koz from producer inventory.

Global platinum demand rose 180 koz (+10%) quarter-on-quarter to 2,010 koz despite lower jewellery (-11%) and industrial usage (-6%), as automotive demand improved (+2%) and investment demand had a positive quarter after seeing disinvestment in Q4'15.

The disruption in refined production along with reasonable overall demand for platinum in the first quarter of 2016 resulted in the global platinum market having a deficit of 275 koz (Chart 1).

Chart 1: Supply-demand balance, koz, Q1 2016

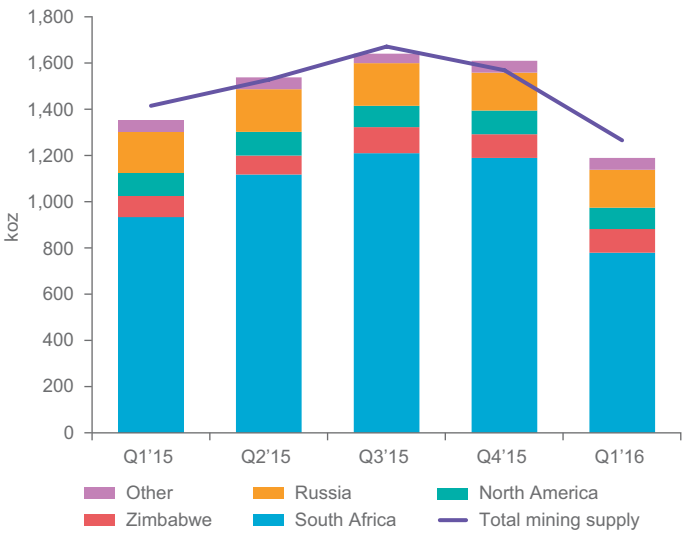


Source: SFA (Oxford)

Supply

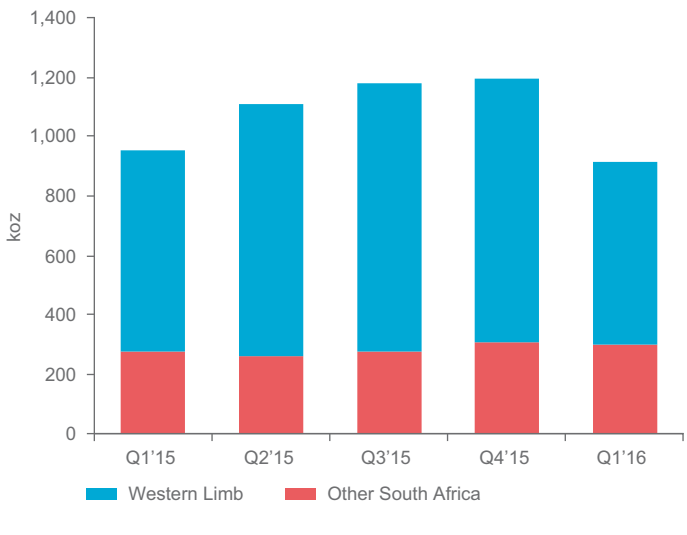
Total mining supply in Q1'16 is estimated to be 15% lower than Q4'15 at 1,340 koz, with refined production down by 26% (-420 koz) at 1,190 koz (Chart 2). Temporary closure of a refinery due to a Section 54 stoppage and a repeat of similar safety related stoppages in the mines (as per Q1'15) have negatively impacted South African refined production. As a result of the drop in refined production, sales from producer inventory are estimated at 150 koz. During 2015, in which there were no major strikes, net inventory sales occurred in Q1 and Q3. Estimates for 2016 are based on this trend, with a slightly heavier weighting to Q1, during which there were fewer shifts and a temporary closure of a precious metals refinery.

Chart 2: Global refined production



Source: SFA (Oxford)

Chart 3: South African refined production



Source: SFA (Oxford)

Total mining supply was 5% lower than in Q1'15, but metal-in-concentrate production has increased by a modest amount year-on-year at this stage, and the material built up in the pipeline should be processed by year-end. For South Africa, the first quarter typically sees a dip in refined production ahead of a recovery in the final quarter of the calendar year.

Refined production from South Africa (Chart 3) is estimated to have decreased from 1,190 koz in Q4'15 to 785 koz in Q1'16 (-34%), with Western Limb supply declining by 275 koz and a 65 koz reduction for each of the Northern and Eastern Limbs. In the rest of the world, production was 15 koz lower for Q1'16 year-on-year. Supply decreased in Russia (-20 koz), as refined production has been impacted by a reorganisation of processing capacity, but production was stable or marginally higher in other regions.

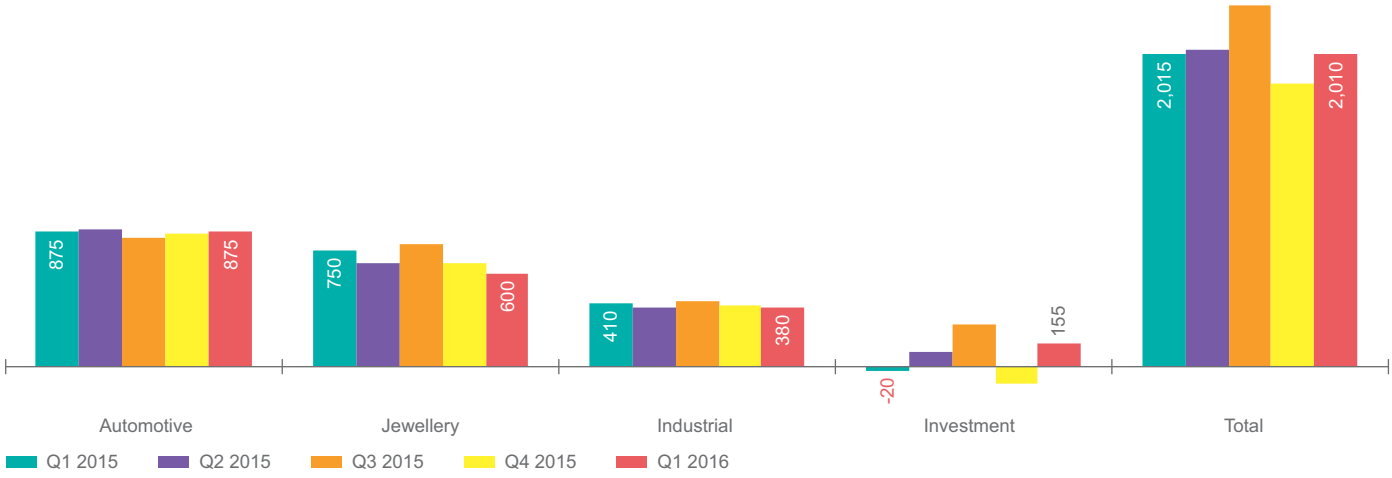
Platinum recovered from scrapped autocatalysts was 280 koz in the first quarter, down 11% year-on-year but up 4% quarter-on-quarter. Scrap steel prices were quite low during the first two months of this year, but rebounded by 18% month-on-month in March, which resulted in an improvement in the level of vehicle scrappage late in the quarter. Platinum prices started to pick up in February (+8% month-on-month) and in March (+5% month-on-month), and the higher prices also gave some impetus to the level of recycling towards the end of the quarter.

Jewellery recycling slipped to 115 koz in the first quarter, 4% lower than in Q1'15 due to declines in both China and Japan. Compared to Q4'15, total jewellery recycling increased by 10 koz.

Demand

Total global platinum demand was 2,010 koz in the first quarter (Chart 4), flat year-on-year and up 10% quarter-on-quarter. A recovery in investment demand from Q4'15, driven by a tailing-off in net sales from ETFs, and a modest increase in automotive demand (+2%) were somewhat offset by a decline in jewellery (-11%) and industrial (-6%) demand.

Chart 4: Platinum demand, koz



Source: SFA (Oxford)

Automotive demand

Automotive demand stood at 875 koz, up 2% on the previous quarter (+20 koz) but unchanged on Q1'15. Western Europe makes up around half of this total demand and half of the quarter-on-quarter growth, with India contributing significantly to this growth too.

Total car sales in Western Europe were up 8% year-on-year in Q1'16, supporting autocatalyst demand for platinum. This growth in overall volumes has helped, so far, to offset diesel cars' (where the majority of platinum is used) declining share of total vehicle sales.

Attractive vehicle finance deals in the UK appear to be sustaining car sales, with minimal consumer concern over future EU membership. Sales in France have continued to grow, supported by improvements in consumer spending and lower unemployment.

Jewellery demand

Platinum jewellery demand in Q1'16 was 600 koz, down 11% on the previous quarter. The main driver of this fall was lower fabricator demand in China, but a jewellery retailers strike in India impacted sales growth there.

Although the Shanghai Gold Exchange trading volume increased 24% year-on-year in Q1'16, the volume in Q1'15 was weak and Q1'16 was in line with the five year average volume for Q1. The gain in jewellery fabricator demand was more subdued than the rise due to other end-uses and platinum imports into China for jewellery use were very weak in the first quarter (-25% year-on-year and -45% quarter-on-quarter). The retail environment was also difficult in the first quarter, with Chinese jewellery sales (all metals) decreasing 7% year-on-year and 5% quarter-on-quarter (Source: National Bureau of Statistics). Retailers reported less than expected store traffic even over the typically buoyant Chinese New Year holiday period. Chinese marriage registrations also dropped 4% year-on-year in the first quarter.

India suffered a one-month strike by jewellery retailers in March over the imposition of a 1% rise in excise duty on non-silver jewellery imports, which significantly hit demand in Q1'16. The full impact of the strike is not yet clear and demand is estimated to have been flat quarter-on-quarter rather than rising strongly, as would have been the case without the strike.

Industrial demand

Net platinum use in industrial applications fell by 7% year-on-year and 6% quarter-on-quarter to 380 koz in Q1'16. Lower requirements for use in petroleum refining (-25 koz year-on-year), chemical catalysts (-15 koz) and electrical components (-5 koz) outweighed greater demand from the glass sector (+5 koz) and other industrial end-uses (+10 koz) compared to Q1'15. First-quarter chemical demand fell from a strong Q1'15, when PDH and BDH capacity growth boosted requirements in China, North America and the Rest of the World, whilst HDD deliveries declined by 20% year-on-year in Q1'16. However, increased metal buying by glass fabricators in the Rest of the World and fuel cell manufacturers in Japan partially offset declines elsewhere in the last quarter.

Investment demand

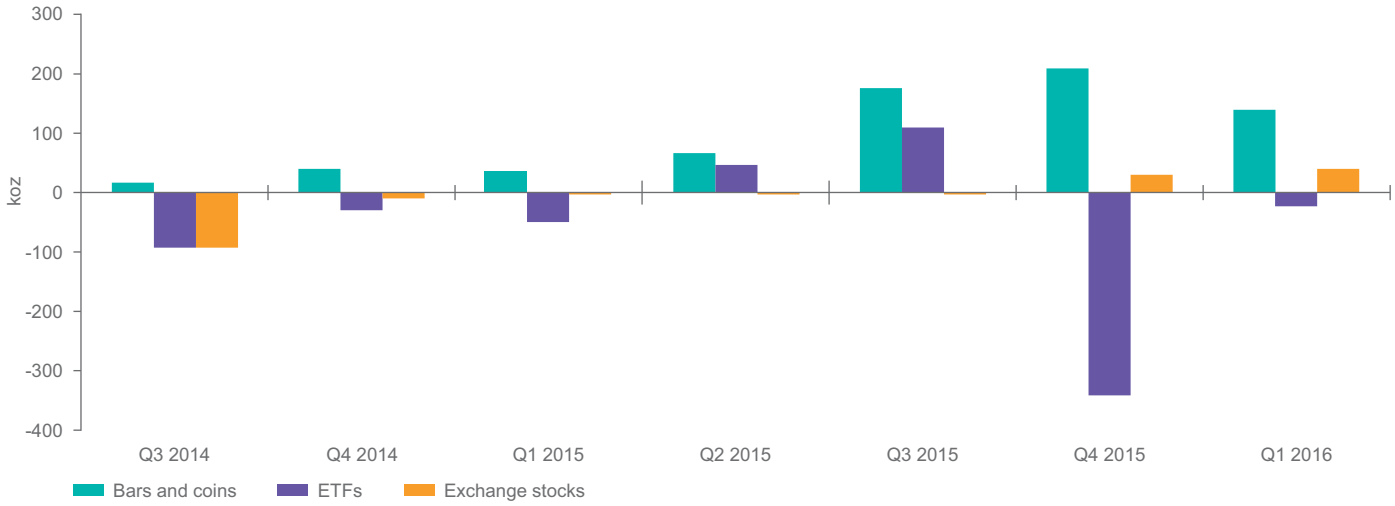
In the first quarter of 2016 global investment in platinum totalled 155 koz, as bar and coin purchases of 140 koz and movements in exchange stocks of 40 koz outweighed a decline in ETF holdings of 25 koz (Chart 5).

The final quarter of 2015 had seen significant reductions in ETF holdings and this selling continued in the first part of 2016. However, as the platinum price recovered over the quarter, sales switched to purchases, particularly in South Africa where an 88 koz decline in January and February was partially reversed in March as ETFs there gained 31 koz. US investors reversed sales of 10 koz in January, with purchases of 31 koz over the final two months of the quarter.

Overall, the first quarter of the year saw a drop in global ETF holdings of 25 koz, driven by a decline of 56 koz in South African ETF holdings. In the first three months of the year, US, European and Japanese investors raised their holdings by 20 koz, 7 koz and 4 koz respectively. In Europe, UK and Swiss investors added a modest 3 koz and 4 koz respectively to their ETF holdings.

Bar and coin investment was 140 koz in the first quarter. This was again driven by bar purchases in Japan, which were up significantly year-on-year, but were down from the very high levels seen in the second half of 2015. Initial indications suggest that coin buying was not quite as strong in Q1'16 as in Q1'15. However, the impact of the launch of the new Austrian Mint platinum Philharmonic coin in February is still being evaluated.

Chart 5: Platinum investment



Source: SFA (Oxford)

2016 FORECAST

The platinum market in 2016 is forecast to have a deficit of 455 koz (Chart 6). This is larger than the 135 koz deficit anticipated in the previous Platinum Quarterly owing to a combination of lower supply and higher demand projections for this year. Estimates for the amount of total mining supply have been revised down by 75 koz, owing to a temporary shaft closure in South Africa. The growth rate of autocatalyst recycling has been reduced after a slow start to the year and the anticipated level of jewellery recycling has been revised down due to lower prices discouraging recycling in Japan and subdued jewellery sales in China in Q1'16. Forecast demand has been lifted by 90 koz owing to greater anticipated investment demand, as Japanese bar buying remains robust, and a modest increase in industrial usage, outweighing reductions in the expected growth in automotive and jewellery consumption.

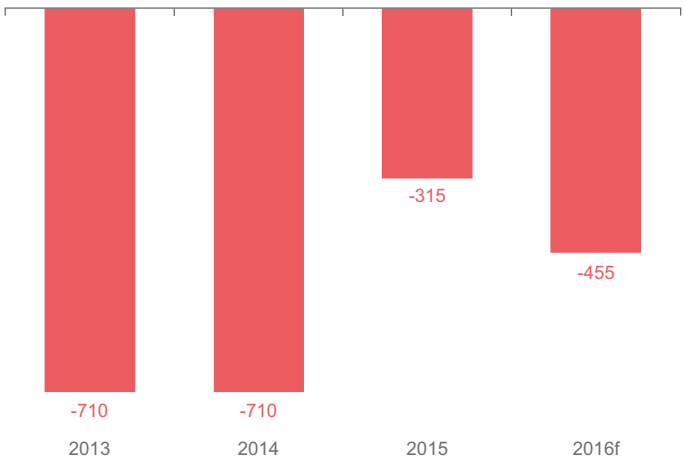
Global platinum demand is projected to increase marginally to 8,255 koz in 2016. Automotive demand is forecast to be 3,425 koz this year, slightly lower than in 2015 (-1%). Weaker platinum demand for passenger cars and heavy-duty vehicles in the US and a small reduction in Western Europe, as diesel share declines are not fully offset by growing vehicle sales, outweigh increases in automotive platinum demand in other regions. Jewellery consumption is expected to increase marginally to 2,895 koz (+1%) as an anticipated decline in Chinese jewellery purchases is offset by growing requirements elsewhere, particularly India. Industrial platinum usage is projected to contract by 3% to 1,585 koz, mostly owing to falls in petroleum and glass demand caused by reduced new capacity builds. Investment demand is projected to add 350 koz to total demand in 2016, driven by a continuation of robust bar buying in Japan.

Total supply is forecast to decrease 1% to 7,800 koz this year as lower refined production from South Africa and Russia outweighs increases in other regions and from recycling (Chart 7).

Refined supply is forecast to be 5,895 koz in 2016, with total mining supply of 5,995 koz as some sales from producer inventory are expected. South African output is forecast to be 4,210 koz, down 6% from 4,465 koz in 2015 owing to the impact of shaft closures. Russian supply is also expected to be 6% lower this year at 675 koz, as some material will be locked up in the production pipeline when processing facilities are reconfigured.

Platinum recovered via recycling is estimated to increase by 95 koz (+6%) to 1,805 koz, with secondary supply from autocatalysts growing to 1,305 koz (+10%) as volumes are projected to recover with the improvement in metal prices, and jewellery recycling dipping 20 koz to 495 koz.

Chart 6: Supply-demand balance, koz, 2013-2016f



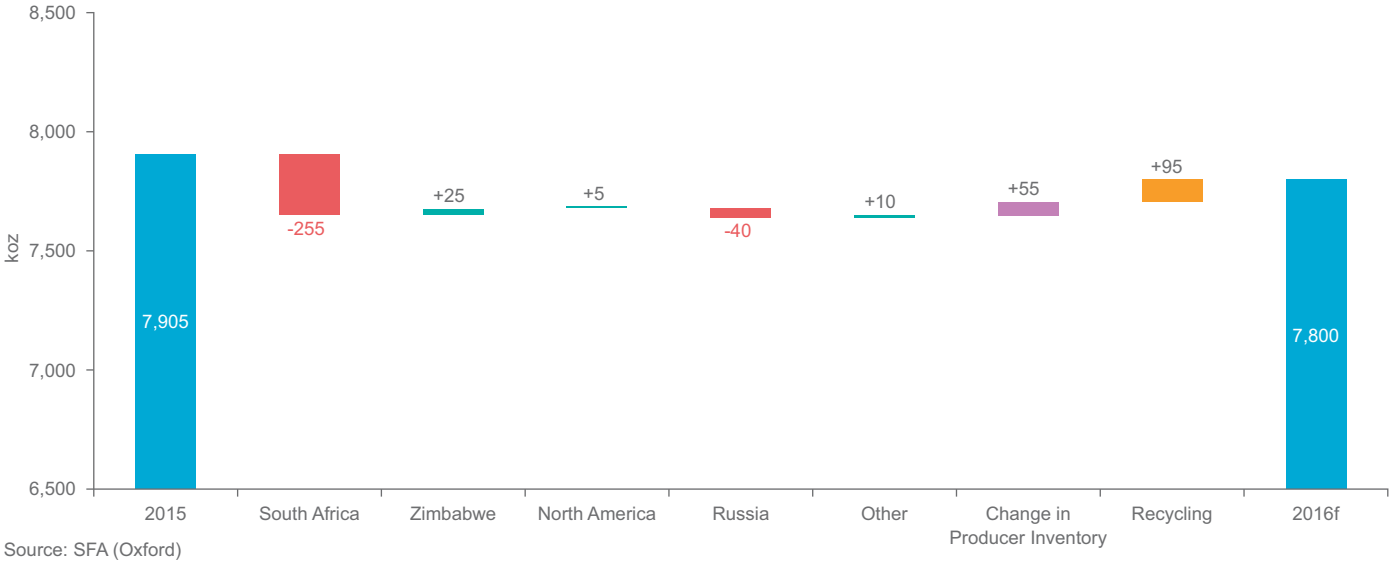
Source: SFA (Oxford)

Mine supply

Global refined supply is forecast to decrease by 4% to 5,895 koz in 2016. The estimate for total mining supply falls short of 2015 levels by 200 koz (5,995 koz), and this includes the anticipated sales from producer inventory of 100 koz. Planned and incidental shaft closures are likely to impact on South African production levels this year (-6% to 4,210 koz), offsetting supply growth from shafts still in ramp-up phase.

Production from Russia is anticipated to drop by 35-40 koz year-on-year (-6%) to 675 koz this year, because a lock-up of around 55 koz is expected in the pipeline owing to a reconfiguration of processing facilities. Completion of an expansion project sees output from Zimbabwe increase to 430 koz (+6%), and North American production should remain stable at 390 koz (+1%).

Chart 7: Changes in total supply, 2016f vs. 2015



Source: SFA (Oxford)

Recycling

Recycled platinum from autocatalysts is projected to expand by 115 koz (+10% year-on-year) to 1,305 koz this year. While the first quarter saw only a small improvement quarter-on-quarter in recycled metal, the collection rate of scrapped vehicles has picked up as the rise in scrap steel prices that began in March has continued into the second quarter. The similar improvement in PGM prices has also encouraged scrapped autocatalysts to be recycled. The ongoing trend is for growing numbers of vehicles to reach the end of their lives each year and this, along with higher metal loadings in the recovered autocatalysts, should drive the increase in recycled metal.

Jewellery recycling is projected to be down 4% (-20 koz) at 495 koz this year owing to lower prices discouraging recycling in Japan and subdued sales in China.

Automotive demand

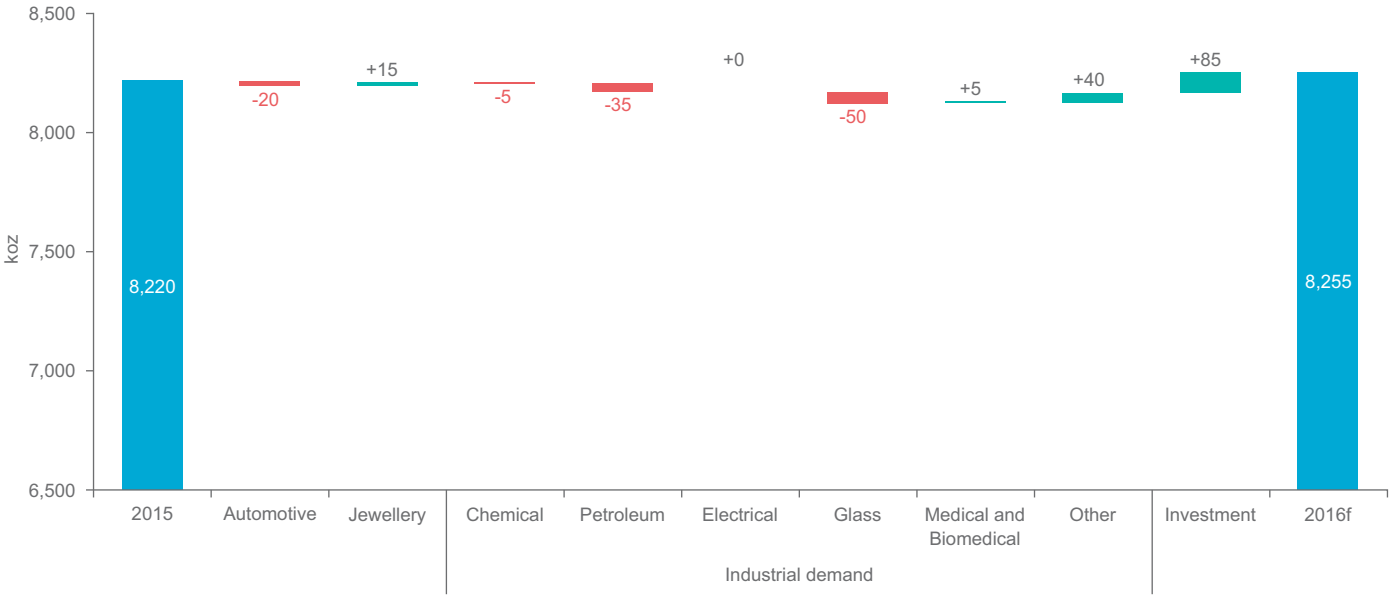
The expected tail-off in growth in Western European vehicles does not appear likely to begin in 2016. Rather, the full-year forecast for 2016 is for 14.04 million units, up 6.5% from 13.19 million units in 2015 (Source: LMC Automotive). The growth forecast should remain cautious, however, with threats around regional economic growth and the possibility of Brexit.

The historically strongest light-duty diesel markets – France, Spain and Belgium – have seen the greatest declines in diesel market share, and are expected to stabilise around 45% to 50%, as is the case in Germany and the UK, the other significant diesel markets.

India, the other market where diesel commands a substantial share of the light-duty vehicle market, is projected to see sales grow at the fastest pace in six years, as rural consumers build wealth and step up purchases of cars and sport utility vehicles in 2016 (Source: Society of Indian Automobile Manufacturers (SIAM)).

Changes in end-use demand from 2015 to 2016 are shown in Chart 8.

Chart 8: Changes in demand by category, 2016f vs. 2015



Source: SFA (Oxford)

Jewellery demand

Jewellery demand is estimated at 2,895 koz for 2016, up 1% (+20 koz) from 2015. India, the US and Western Europe will contribute to this growth while demand in Japan, China and the rest of the world will be flat to slightly lower this year. The price differential to gold is helping demand in the US and Europe. In India the expectation is that consumption will grow 20% this year. However, the impact of the strike by jewellery retailers, which lasted most of March, on full-year demand is unclear and it is currently assumed that any lost sales will be recovered later in the year. Retailers remain positive on platinum jewellery and PGI's Evara campaign should continue to help drive sales. After a weak start to the year in Q1'16, Chinese demand is expected to improve in the remaining quarters, but still fall 2% in 2016. Major retailers are expected to continue to grow their platinum business, but the difficult trading conditions are likely to negatively impact the performance of independent retailers.

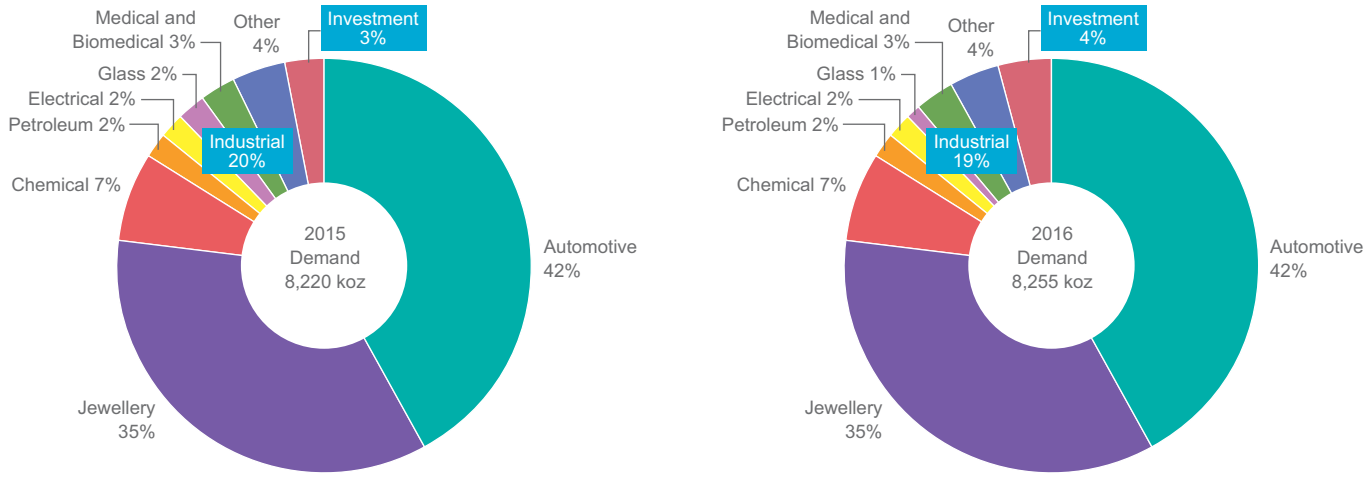
Industrial demand

Net platinum requirements for industrial end-uses are forecast to decline by 3% year-on-year (-45 koz) to 1,585 koz in 2016, mainly owing to lower platinum demand for use in glass fabrication (-50 koz) and petroleum refining (-35 koz), particularly in Japan and Western Europe. However, greater consumption in other end-uses (+40 koz) is expected to offset some of the loss in the glass and petroleum industries. Platinum usage in electrical components is set to remain stable this year, whilst slight growth in medical sector requirements should be balanced by a small drop in use in chemical catalysts.

Net platinum demand is projected to fall in most regions, with Western Europe (-55 koz), Japan (-45 koz) and China (-45 koz) set to decrease the most from 2015, and usage in the Rest of the World also expected to subside slightly in 2016. However, a fall in requirements in these regions is likely to be partially offset by greater demand in North America (+115 koz), driven largely by stronger growth in the petroleum sector this year.

Demand shares by end-use are shown in Chart 9.

Chart 9: Demand end use shares, 2016f vs. 2015



Source: SFA (Oxford)

– Chemical

Platinum requirements for chemical processes are predicted to decrease by 1% (-5 koz) to 590 koz in 2016, weakened by lower demand in North America, China and the Rest of the World. Demand in North America is set to drop back following a spike last year caused by the start-up of new PDH capacity, whilst fewer new PDH facilities this year, combined with slower nitric acid capacity growth, is likely to reduce requirements in the Rest of the World. In China, lower demand for use in nitric acid production is anticipated to outweigh greater platinum requirements for new PDH and butane dehydrogenation capacity, whilst consumption by silicone manufacturers is set to remain stable. Conversely, platinum usage in Western Europe is forecast to grow this year, lifted by a recovery in nitric acid demand from a dip in 2015, and should offset some of the reductions seen elsewhere. Historical platinum demand figures for the global chemical industry have been amended since the previous quarterly report, as further research into company production bases and capacities resulted in an adjusted allocation of regional demand.

– Petroleum

Petroleum industry demand for platinum is projected to decline by 22% (-35 koz) to 125 koz this year, despite the anticipated expansion of North America's refining capacity, as closures in Western Europe and Japan are set to return metal to the market and therefore reduce net platinum consumption. In Japan, the government's latest regulations are expected to push refiners to reduce and consolidate capacity in 2016, with some closures and refinery integration already underway, whilst in Western Europe planned capacity reductions are likely to go ahead, despite a strong 2015 for European refiners. China's platinum requirements for petroleum refining are also forecast to decrease, as the rate of capacity expansion in the country slows. However, robust capacity growth should significantly boost platinum requirements in North America this year, following a weak 2015, partially offsetting the net negative demand in Japan and Western Europe.

– Electrical

Platinum usage in electrical components is estimated to remain flat year-on-year at 150 koz, despite a further fall in hard disk drive (HDD) shipments in 2016. The rate of decline in HDD deliveries is expected to slow, but annual shipments are still predicted to decrease by 3% this year, resulting in a small drop in the platinum required for HDD manufacture. However, lower demand for use in HDDs is expected to be negated by steady growth in platinum consumption in other electrical components, and demand is set to remain relatively stable in all regions.

– Glass

Net platinum demand for use in glass fabrication is projected to fall by 30% (-50 koz) to 115 koz this year, as metal purchasing for new plants decreases in China and the Rest of the World, in particular. Further closures of liquid-crystal display (LCD) facilities in Japan should return metal to the market, resulting in net negative demand in the country, whilst Western Europe's glass fabricating capacity is also likely to decline, as the number of planned closures and capacity reductions outweighs plant expansions in the region. In the Rest of the World, the platinum requirements for use in a number of new plants which commenced operations in early 2016 were likely purchased last year, increasing the region's anticipated demand decline from 2015.

– Other

Platinum consumption in other industrial end-uses is expected to rise by 13% (+40 koz) in 2016, mainly owing to demand growth in Japan and North America. Demand in North America is set to be lifted by greater platinum usage in automotive sensors and fuel cells, whilst consumption in Japan is also likely to be boosted by increased fuel cell manufacture. Demand in China, Western Europe and the Rest of the World is forecast to rise slightly this year, underpinned by steady growth in a variety of other industrial end-uses.

Investment demand

Investment in platinum in 2016 is estimated to be 350 koz. The forecast has been increased following the strong start to the year for bar and coin purchases in Q1'16. However, this is likely to ease in subsequent quarters, as the yen is projected to weaken from its current level against the US dollar, raising the platinum price in yen terms, and Japanese bar purchases are expected to slow. ETF holdings are anticipated to rise modestly over the remaining quarters.

ABOVE GROUND STOCKS

As the market is forecast to have a deficit of 455 koz in 2016, above ground stocks are expected to end the year at 1,950 koz.

The WPIC definition of above ground stocks is: the year-end estimate of the cumulative platinum holdings not associated with exchange-traded funds, metal held by exchanges or working inventories of mining producers, refiners, fabricators or end-users.

Table 2: Supply, demand and above ground stocks summary – annual comparison

	2013	2014	2015	2016f	2015/2014 Growth %	2016f/2015 Growth %
Platinum Supply-demand Balance (koz)						
SUPPLY						
Refined Production	**6,070**	**4,880**	**6,150**	**5,895**	**26%**	**-4%**
South Africa	4,355	3,115	4,465	4,210	43%	-6%
Zimbabwe	405	405	405	430	0%	6%
North America	355	400	385	390	-4%	1%
Russia	740	740	715	675	-3%	-6%
Other	215	220	180	190	-18%	6%
Increase (-)/Decrease (+) in Producer Inventory	-215	+350	+45	+100	-87%	122%
Total Mining Supply	**5,855**	**5,230**	**6,195**	**5,995**	**18%**	**-3%**
Recycling	**1,985**	**2,040**	**1,710**	**1,805**	**-16%**	**6%**
Autocatalyst	1,120	1,255	1,190	1,305	-5%	10%
Jewellery	855	775	515	495	-34%	-4%
Industrial	10	10	5	5	-50%	0%
Total Supply	**7,840**	**7,270**	**7,905**	**7,800**	**9%**	**-1%**
DEMAND						
Automotive	**3,150**	**3,280**	**3,445**	**3,425**	**5%**	**-1%**
Autocatalyst	3,010	3,130	3,295	3,265	5%	-1%
Non-road	145	150	145	150	-3%	3%
Jewellery	**2,945**	**3,000**	**2,880**	**2,895**	**-4%**	**1%**
Industrial	**1,520**	**1,550**	**1,630**	**1,585**	**5%**	**-3%**
Chemical	540	570	595	590	4%	-1%
Petroleum	115	65	160	125	146%	-22%
Electrical	190	190	150	150	-21%	0%
Glass	155	180	165	115	-8%	-30%
Medical and Biomedical	235	240	250	255	4%	2%
Other	285	305	310	350	2%	13%
Investment	**935**	**150**	**265**	**350**	**77%**	**32%**
Change in Bars, Coins	-5	50	485			
Change in ETF Holdings	905	215	-240			
Change in Stocks Held by Exchanges	35	-115	20			
Total Demand	**8,550**	**7,980**	**8,220**	**8,255**	**3%**	**0%**
Balance	**-710**	**-710**	**-315**	**-455**	**-56%**	**44%**
Above Ground Stocks 4,140*	**3,430**	**2,720**	**2,405**	**1,950**	**-12%**	**-19%**

Source: SFA (Oxford). *As of 31st December 2012. NB: Numbers have been independently rounded.

Table 3: Supply, demand and above ground stocks summary – quarterly and half-yearly comparison

	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	H1 2015	H2 2015
Platinum Supply-demand Balance (koz)							
SUPPLY							
Refined Production	**1,355**	**1,540**	**1,650**	**1,610**	**1,190**	**2,895**	**3,260**
South Africa	935	1,125	1,210	1,190	785	2,060	2,400
Zimbabwe	95	80	115	110	100	175	225
North America	100	100	90	100	95	200	190
Russia	180	190	190	160	160	370	350
Other	45	45	45	50	50	90	95
Increase (-)/Decrease (+) in Producer Inventory	+60	-5	+30	-40	+150	+55	-10
Total Mining Supply	**1,415**	**1,535**	**1,680**	**1,570**	**1,340**	**2,950**	**3,215**
Recycling	**435**	**475**	**415**	**375**	**395**	**910**	**790**
Autocatalyst	315	310	295	270	280	625	565
Jewellery	120	165	120	105	115	285	225
Industrial	0	0	0	0	0	0	0
Total Supply	**1,850**	**2,010**	**2,095**	**1,945**	**1,735**	**3,860**	**4,040**
DEMAND							
Automotive	**875**	**885**	**830**	**855**	**875**	**1,760**	**1,685**
Autocatalyst	835	840	795	820	835	1,675	1,615
Non-road	40	40	35	40	40	80	75
Jewellery	**750**	**670**	**795**	**675**	**600**	**1,420**	**1,470**
Industrial	**410**	**385**	**425**	**405**	**380**	**795**	**830**
Chemical	160	135	160	120	145	295	280
Petroleum	40	40	40	40	15	80	80
Electrical	40	35	40	35	35	75	75
Glass	35	30	60	50	40	65	110
Medical and Biomedical	60	70	50	75	60	130	125
Other	75	75	75	85	85	150	160
Investment	**-20**	**105**	**280**	**-105**	**155**	**85**	**175**
Change in Bars, Coins	35	65	175	210	140	100	385
Change in ETF Holdings	-50	45	110	-345	-25	-5	-235
Change in Stocks Held by Exchanges	-5	-5	-5	30	40	-10	25
Total Demand	**2,015**	**2,045**	**2,330**	**1,830**	**2,010**	**4,060**	**4,160**
Balance	**-165**	**-35**	**-235**	**115**	**-275**	**-200**	**-120**

Source: SFA (Oxford). NB: Numbers have been independently rounded.

Table 4: Regional demand – annual and quarterly comparison

	2013	2014	2015	2016f	2016f/2015 Growth %	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016
Platinum gross demand (koz)										
Automotive	**3,150**	**3,280**	**3,445**	**3,425**	**-1%**	**875**	**885**	**830**	**855**	**875**
North America	425	460	480							
Western Europe	1,350	1,445	1,595							
Japan	580	585	570							
China	130	125	115							
India	160	160	170							
Rest of the World	505	505	515							
Jewellery	**2,945**	**3,000**	**2,880**	**2,895**	**1%**	**750**	**670**	**795**	**675**	**600**
North America	200	230	250							
Western Europe	220	220	235							
Japan	335	335	340							
China	1,990	1,975	1,765							
India	140	175	220							
Rest of the World	60	65	70							
Chemical**	**540**	**570**	**595**	**590**	**-1%**	**160**	**135**	**160**	**120**	**145**
North America	55	60	70							
Western Europe	105	110	105							
Japan	10	15	10							
China	215	225	235							
Rest of the World	155	160	175							
Petroleum	**115**	**65**	**160**	**125**	**-22%**	**40**	**40**	**40**	**40**	**15**
North America	40	25	-25							
Western Europe	-45	-15	70							
Japan	10	-35	5							
China	80	-5	45							
Rest of the World	30	95	65							
Electrical	**190**	**190**	**150**	**150**	**0%**	**40**	**35**	**40**	**35**	**35**
North America	20	20	15							
Western Europe	15	15	10							
Japan	20	20	15							
China	75	70	70							
Rest of the World	60	65	40							
Glass	**155**	**180**	**165**	**115**	**-30%**	**35**	**30**	**60**	**50**	**40**
North America	5	10	0							
Western Europe	-10	15	10							
Japan	0	-10	-5							
China	80	65	60							
Rest of the World	80	100	100							
Medical and Biomedical	**235**	**240**	**250**	**255**	**2%**	**60**	**70**	**50**	**75**	**60**
North America	90	95	95							
Western Europe	90	90	95							
Japan	20	20	20							
China	15	15	20							
Rest of the World	20	20	20							
Other industrial	**285**	**305**	**310**	**350**	**13%**	**75**	**75**	**75**	**85**	**85**
Investment	**935**	**150**	**265**	**350**	**32%**	**-20**	**105**	**280**	**-105**	**155**
Total Demand	**8,550**	**7,980**	**8,220**	**8,255**	**0%**	**2,015**	**2,045**	**2,330**	**1,830**	**2,010**

Source: SFA (Oxford). NB: Numbers have been independently rounded. Note: ** Historical platinum demand figures for the global chemical industry have been amended to incorporate research into company production bases and capacities which resulted primarily in an adjusted allocation of regional demand and some restatement of demand.

GLOSSARY OF TERMS

Above ground stocks

The year-end estimate of the cumulative platinum holdings not associated with: exchange-traded funds, metal held by exchanges or working inventories of: mining producers, refiners, fabricators or end-users. Typically, unpublished vaulted metal holdings from which a supply-demand shortfall can be readily supplied or to which a supply-demand surplus can readily flow.

BDH

Butane dehydrogenation; catalytic conversion of isobutane to isobutylene.

Bharat Stage III/IV standards (BS-III, BS-IV)

Bharat Stage III is equivalent to Euro 3 emissions legislation. Introduced in 2005 in 12 major cities across India and enforced nationwide from April 2010. Bharat Stage IV is equivalent to Euro 4 emissions legislation. Introduced in 2010 in 14 major cities across India and set to be enforced nationwide from April 2017.

Bharat Stage V/VI standards (BS-V, BS-VI)

Early in 2016 the Indian government announced the intention to 'leapfrog' Bharat Stage V and move directly to Bharat Stage VI, equivalent to Euro 6, in 2020.

Conformity factor (CF)

The EU is to allow automakers to exceed current Euro 6 NO_x limits, giving time to adapt to new real-world driving emissions rules. From September 2017 for new models and from September 2019 for new vehicles, a CF of up to 2.1 (110%) will be allowed over the 80 mg/km NOx limit. This CF will be phased out at the latest in 2021, then from January 2020 (new models) and January 2021 (new vehicles) a lower CF of 1.5 will be allowed, reflecting statistical and technical uncertainty of the tests.

Diesel oxidation catalyst (DOC)

A DOC oxidises harmful carbon monoxide and unburnt hydrocarbons, produced by incomplete combustion of diesel fuel, to harmless carbon dioxide and water.

Diesel particulate filter (DPF) and catalysed diesel particulate filter (CDPF)

A DPF physically filters particulates (soot) from diesel exhaust. A CDPF adds a PGM catalyst coating to facilitate oxidation and removal of the soot. The terms are often used interchangeably.

Emissions legislation

Tailpipe regulations covering emissions of particulate matter, hydrocarbons and oxides of nitrogen.

ETF

Exchange-traded fund. A security that tracks an index, commodity or basket of assets. Platinum ETFs included in demand are backed by physical metal.

Euro V/VI emission standards

EU emission standards for heavy-duty vehicles. Euro V legislation was introduced in 2009 and Euro VI in 2013/2014; will be widely adopted later in other regions.

Euro 5/6 emission standards

EU emission standards for light-duty vehicles. Euro 5 legislation was introduced in 2009 and Euro 6 in 2014/2015; will be widely adopted later in other regions.

Form factor

The size of a hard disk drive (e.g. 2.5-inch or 3.5-inch) which varies depending on the device the drive is used in.

GTL

Gas-to-liquids is a refinery process that converts natural gas to liquid hydrocarbons such as gasoline or diesel fuel.

HDD

Hard disk drive.

HDV

Heavy-duty vehicle.

koz

Thousand ounces.

LCD

Liquid-crystal display used for video display.

LCV

Light commercial vehicle.

Lean NO_x traps (LNT)

Rhodium-based, catalyses the chemical reduction of NO_x in diesel engine exhaust to harmless nitrogen.

Metal-in-concentrate

PGMs contained in the concentrate produced after the crushing, milling and froth flotation processes in the concentrator. It is a measure of a mine's output before the smelting and refining stages.

moz

Million ounces.

Net demand

A measure of the theoretical requirement for new metal, i.e. net of recycling.

Non-road engines

Non-road engines are diesel engines used, for example, in construction, agricultural and mining equipment, using engine and emissions technology similar to on-road heavy-duty diesel vehicles.

OECD

Organisation for Economic Co-operation and Development, consisting of 34 developed countries.

oz

A unit of weight commonly used for precious metals. 1 troy ounce = 1.1 ounces.

Paraxylene

A chemical produced from petroleum naphtha extracted from crude oil using a platinum catalyst. This is used in the production of terephthalic acid which is used to manufacture polyester.

PDH

Propane dehydrogenation, where propane is converted to propylene.

PGMs

Platinum-group metals.

Producer inventory

As used in the supply-demand balance, the change in producer inventory is the difference between reported refined production and metal sales.

Refined production

Processed platinum output from refineries.

Secondary supply

Recycling output.

Selective catalytic reduction (SCR)

PGM-free, converts harmful NOx in diesel exhaust to harmless nitrogen, via a tank of urea solution. Used in heavy-duty diesel vehicles, increasingly competes with LNT in light-duty diesel vehicles.

SGE

Shanghai Gold Exchange.

Stage 4 regulations

European emission standards implemented in 2014 for non-road diesel engines.

Three-way catalyst

Used in gasoline cars to remove hydrocarbons, carbon monoxide and NO_x. Largely palladium-based now, some rhodium.

Tier 4 stage

Emissions standards phased in between 2008 and 2015 in the US for non-road vehicles.

WPIC

The World Platinum Investment Council.

Ounce conversion

1 million ounces = 31.1 tonnes.

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