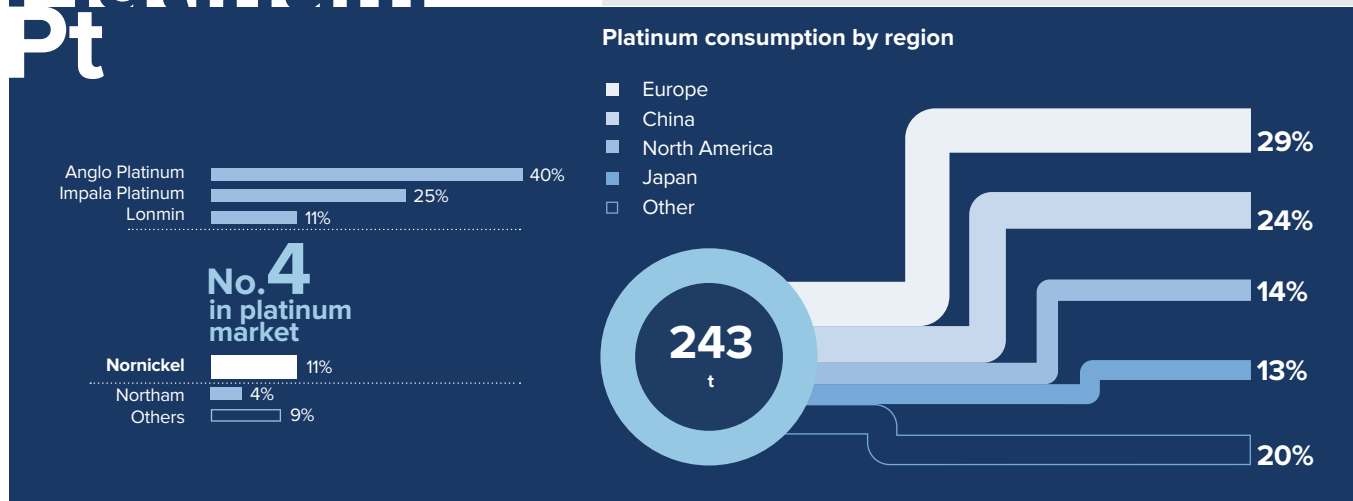


Platinum

Pt



Source: Company data

Key trends in the platinum market

In 2017, platinum prices were trending sideways. Despite several spikes to above USD 1,000 per oz during the year, by the end of the reporting period the metal's price reverted to its starting point of USD 930 per oz.

The changes in platinum and gold prices in 2017 mostly occurred in sync, indicative of platinum prices being highly dependent on macroeconomic trends, which were largely positive during the year. The weak US dollar against other currencies and the challenging geopolitical environment, including concerns around North Korea's nuclear programme, supported precious metal prices. At the same time, they faced certain pressure due to the rally in the US stock market, which resulted in some investors migrating from metals to equities.

In March–April and September, the platinum to gold price spread was increasing, with platinum dragging. The platinum price was 20% weaker compared to gold at the year's outset, and that became 30% by the end of 2017, driven by the platinum market's fundamentals as well as by speculation.

The main fundamental drivers included a drop in platinum consumption by the automotive industry due to reduced share of diesel passenger cars in the key markets of Western Europe and India, no awaited recovery in demand from Chinese jewellers, and primary production not being too receptive to low

2017

The market was balanced on the back of decreasing consumption by the automotive and jewellery industries, upward investor demand and consumption trends in other industries, and primary production growth fuelled by low prices.

Outlook: neutral.

In 2018, the market is expected to remain more or less balanced, with a moderate recovery in demand and stable supply as the decrease in primary production would be offset by higher recycling volumes.

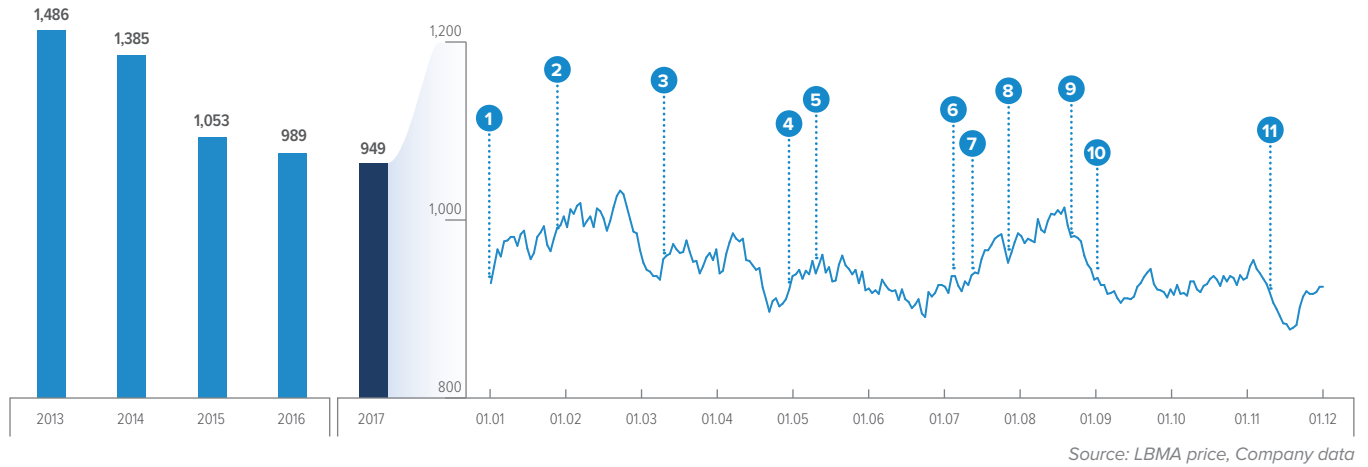
prices. Speculation was another big negative factor, with investors betting on a downward metal price trend. They took twice as many short positions in platinum (amounting to 2 mln oz) on the Chicago Mercantile Exchange (CME) as the year before, while the number of long positions increased only by a third.

The largely negative sentiment drove the average annual platinum price for 2017 below the last year's level to its twelve-year low of USD 949 per oz.

Market balance

The platinum market was balanced in 2017. Production of primary and recycled metal exceeded industrial and jewellery consumption, but the surplus was accumulated by ETFs and private investors in the physical market.

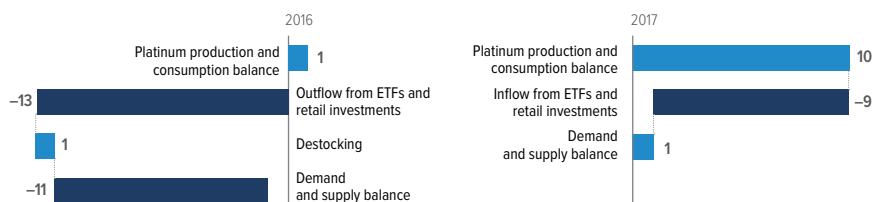
Key industry developments and platinum price // USD/oz



Source: LBMA price, Company data

- 1 On 23 December 2016, China's government released the plan to implement the China 6 emission standard, one of the most stringent regulations among those in place or planned to be introduced;
- 2 South African producers announced a potential decline in PGM output; poor production data came from Canadian assets; Volkswagen revealed plans to switch from small diesel engines to mild hybrids;
- 3 City administrations of London and Paris announced plans to step up measures to control exhaust emissions into the air;
- 4 US released weak statistics on car production; South Africa's Minister of Mineral Resources said that the country is planning to raise the target for black ownership in mining companies to 30%;
- 5 China moved the deadline for quotas on electric cars to 2019;
- 6 South Africa's Bokoni mine will be mothballed;
- 7 Lonmin announced plans to raise cash from selling surplus processing capacity;
- 8 Chancellor Angela Merkel announced Germany's plans to support the EU initiative to ban internal combustion engine cars;
- 9 South Africa's Maseve mine will be put on care and maintenance;
- 10 US released strong car production data; additional demand for cars came in the aftermath of the Irma and Harvey hurricanes;
- 11 Sibanye-Stillwater announced a takeover offer for Lonmin

Platinum market balance // t



Source: Company data

Company overview

Strategy overview

Market overview

Business overview

Corporate governance

Information for shareholders

Appendices

Consumption

Industrial consumption of platinum in 2017 compared to the previous year rose slightly (by 1 t, or 0.5%) and reached 243 t.

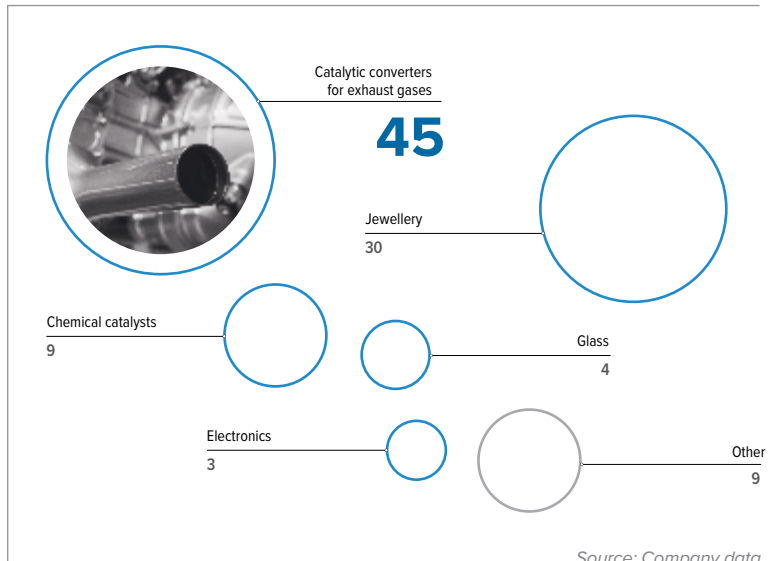
The automotive industry is the main consumer of platinum. Over 70% of platinum in this industry is used to manufacture exhaust gas catalysts for diesel vehicles.

In 2017, platinum consumption in the automotive sector decreased y-o-y by 0.9 t, or 1%, which mainly had to do with a decreased share of diesel vehicles in their key market – Europe. By December 2017, the share of diesel sales in Germany dropped from 46% to 39% y-o-y, having hit its minimum level since 2009 at 36% in September. France also saw a continued decline in diesel vehicle sales, which amounted to 47% compared to 52% in the previous year. Five years ago, that share was three quarters of the market.

India, which is a key market that had been viewed as a bastion for diesel vehicle production, was also on the decline over the recent years, with the share of diesel sales in the country's car market having decreased twofold (from 47% to 23%) during 2012–2017.

Diesel engines are giving way to petrol-based solutions, and more expensive vehicles utilise hybrids (combining petrol and electric engines). Petrol engine being a component of a hybrid necessitates wide use of palladium-based catalysts. Having the same displacement as the internal combustion engine, the hybrid uses more of the metal than a traditional petrol engine due to more frequent cold starts.

Platinum consumption in 2017 by industry // %



+0.5%

243 t

Platinum consumption in 2017

Lower platinum consumption by passenger car producers was partially offset by increased manufacturing of heavy-duty vehicles, catalytic devices of which still rely on this metal. Diesel engines, together with hybrids, are the key and most cost-efficient solutions to achieve the EU's targets for reducing CO₂ emissions to 95 g/km by 2020. New diesel cars comply with the existing environmental requirements, but the Volkswagen emissions scandal served to ingrain the public's and authorities' negative attitudes towards diesel transport, especially in the EU, where many cities are now planning to introduce a ban on old diesel cars. This gives reason to expect further declines in the share of passenger diesel cars. However, in absolute terms manufacturing of this type of vehicles will continue to show a positive trend in the near term thanks to overall growth of the automotive industry.

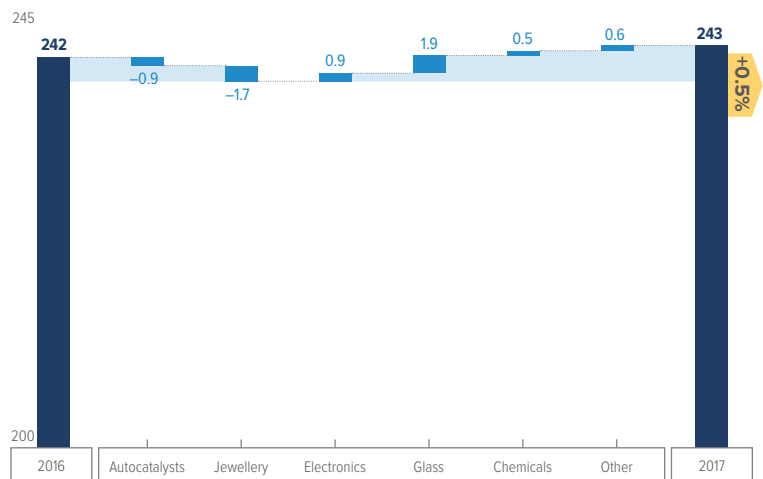
The second biggest platinum consumer is the jewellery industry, accounting for a third of the demand. The reporting period saw a sustained declining trend of platinum consumption in the industry that set in during the previous year, albeit with a lower rate (1.7 t less, or 2%). The decrease was primarily driven by lower jewellery demand in China due to consumers switching to other forms of investing. Still, China retains its high potential, especially when it comes to sales in cities with populations ranging from 150 thousand to 3 mln people.



>70%

of platinum in automotive industry is used to manufacture exhaust gas catalysts for diesel vehicles.

Platinum consumption by application area // t



Source: Company data

Despite the overall decline, the global platinum demand from jewellers was supported by India's market recovery after the roll-out of its tax reform (according to the preliminary PGI data, the country's platinum jewellery market grew by over 20%). Although not quite enough to offset the negative trend in the larger Chinese market, this did somewhat mitigate it.

In 2017, primary platinum consumption for industrial catalyst manufacturing increased by 0.5 t, following the ramp-up of oil and shale gas processing in North America, growth of chemicals production in Western Europe, and launch of plants in China to produce paraxylene (used for paint and varnish manufacturing and propane dehydrogenation purposes) as well as silicone and other basic chemicals. Nitric acid production slowdown put a damper on growth.

The glass industry needs platinum to produce glass fibre and optical glass used in the LCDs of the majority of electronic products. In 2017, the industry's demand grew significantly by 1.9 t, or 20%, supported by active expansion of LCD production capacities.

The electronics industry saw a modest growth in platinum consumption (by 0.9 t) triggered by the increase in the platinum-based hard drive component production due to the expansion of remote data storage capacities. The following years will see the advent of the new MAMR and HAMR hard drive technologies, which will greatly increase the amount of data that can be stored on a hard disk drive, breathing new life into the technology lately beleaguered by competition from solid-state drives (SSDs).

Platinum is also widely used as an investment instrument. Physical investments may vary from coins and smaller bars to investments in ETFs that accumulate large amounts of platinum in the form of standard-sized bars. The 2017 y-o-y retail demand was somewhat lower (6 t), which was driven by the neutral platinum price trend and a sustained discount to gold. During the year, the investments in platinum ETFs increased by 3 t.

+2%

194 t

global production of primary platinum in 2017

+20%

1.9 t

growth of the glass industry's demand for platinum in 2017

Production

Global production of primary platinum in 2017 rose by 4 t (or 2%) y-o-y and reached 194 t.

South Africa, the metal's major producer, was affected by the mothballing of the Bokoni and Maseve mines, furnace maintenance at Impala Platinum's mines, process-related closure of the Mototolo concentrator, and challenges in accessing the ore body at the Zondereinde mine. Despite these factors, the country saw a 6.1 t rise in output driven by greater production volumes at other sites, especially at the Mogalakwena mine – Anglo American Platinum's largest asset. Sibanye-Stillwater also boasted a rise in production.

As the market walks the surplus line and prices remain low, putting the margins of many projects at risk, South African producers are being lax on curbing the supply and continue to ramp up production to achieve even lower unit cost of platinum and boost revenues.

Russia saw a moderate increase in output, as lower production at Far Eastern mines was offset by higher volumes from Norilsk Nickel, which it achieved by processing copper concentrate purchased from the state-controlled Rostec corporation, using up work-in-progress inventories at Polar Division, and reducing the work-in-progress materials in transit following the now completed reconfiguration of its production facilities.

In Zimbabwe, production was marginally up, driven by the Zimplats and Mimosa mines. However, planned maintenance at the Unki concentrator in Q4 2017 brought the overall performance slightly down.

Canada sustained a significant drop in production (by 1 t, or 15%) due to lower platinum output by the Vale and Glencore assets, which was partially offset by volumes from the North American Palladium mine. In the USA, Sibanye-Stillwater's production demonstrated moderate growth, which will be bolstered by the volumes from Blitz project that was launched in 2017.

The main sources of recycled platinum are used exhaust gas catalysts and jewellery scrap. Recycled output in 2017 amounted to 6 t (up to 59 t), chiefly due to higher automotive and jewellery scrap volumes.

Collection of autocatalyst scrap increased amid the growth of prices on steel and other PGMs, as well as due to higher recycling volumes of European diesel cars with a high platinum content in the catalysts.

The sources of previously accumulated platinum stockpiles include trading companies, financial institutions, and surplus inventories of consumers, while the movement of these inventories is non-transparent.

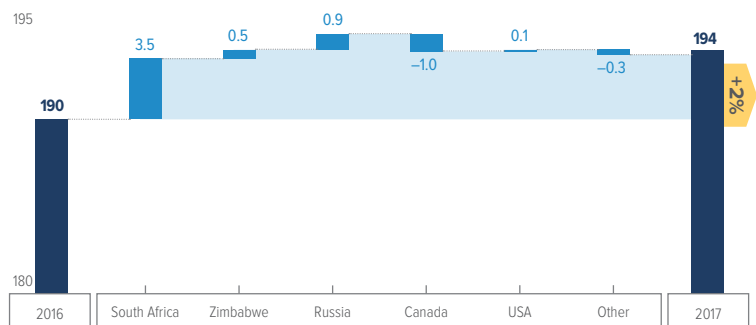
949

USD per oz

the average annual platinum price for 2017

-4%

Primary platinum production // t



Source: Company data