



The Platinum Standard 2026

Setting the PGM agenda for the years ahead

Produced in collaboration with



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Published in May 2026 by SFA (Oxford) Ltd.

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FOREWORD



Foreword

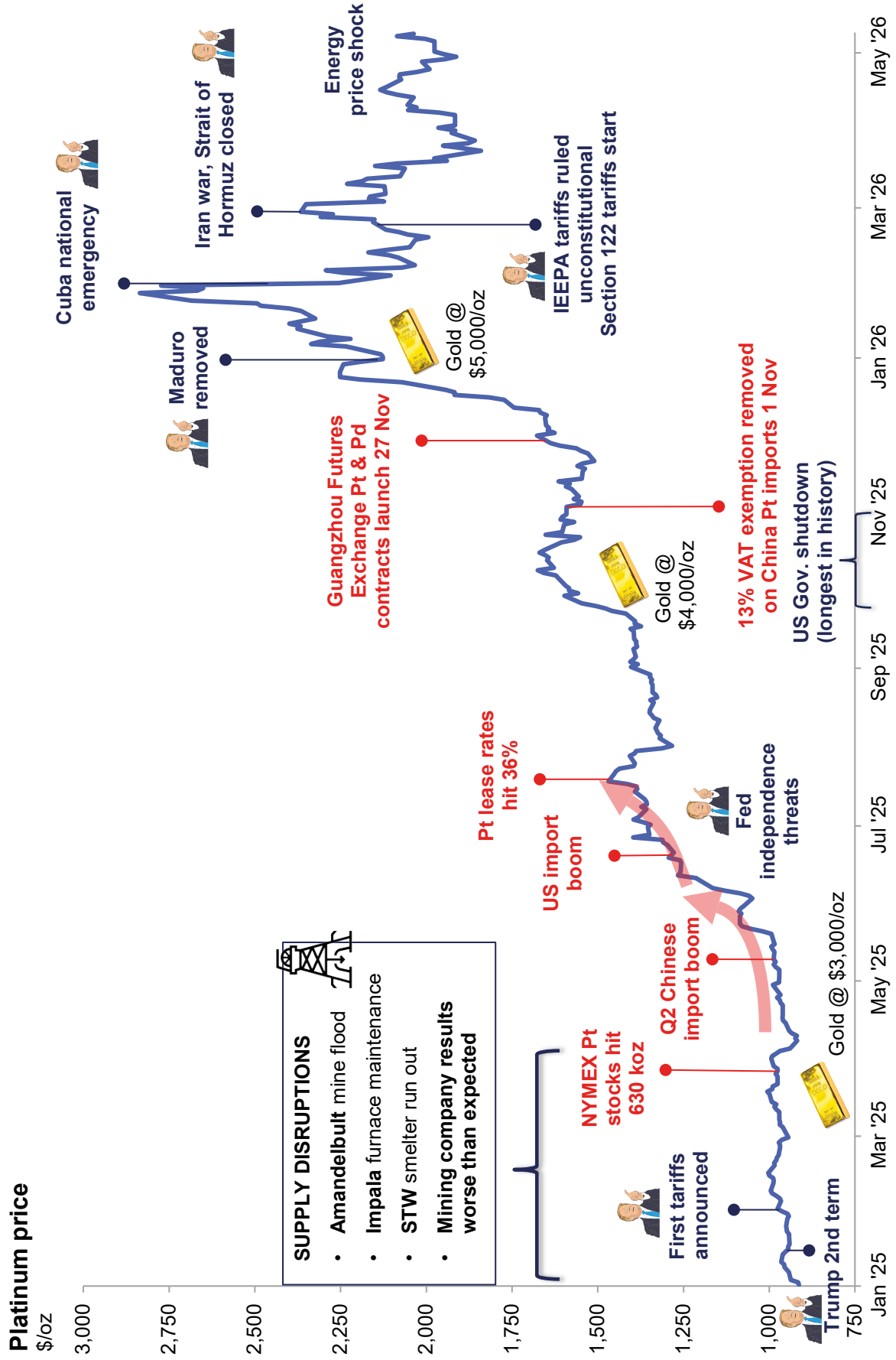
PGMs in a multipolar world

This time a year ago, the world was coming to terms with the tariffs that President Trump imposed globally on US imports. The PGM markets were in deficit and, although primary supply experienced challenges in Q1'25, the metals' prices were subdued. However, PGM trade flows were shifting, liquidity tightened, prices rallied and the platinum price hit a record high, more than doubling by the end of the year.

This year, the world is having to deal with the fallout from the conflict in the Middle East which has closed the Strait of Hormuz and resulted in a significant proportion of the global supply of energy products and other critical commodities being cut off.

Higher prices have been the immediate result but, with the strait closed for 10 weeks and counting, real shortages could develop across numerous industries which will likely cause production shutdowns where the key input is simply unavailable, resulting in supply constraints and even higher prices, and have negative implications for economic growth. This is a challenging environment in which to be making forecasts as several plausible scenarios could play out depending on how long the strait is closed, which would have progressively greater negative impacts on PGM demand.

The issue of critical minerals has become more important as China imposed export controls amid the trade war with the US, and the issue of security of supply has been underlined by the closure of the Strait of Hormuz. PGMs are on many countries' critical mineral lists but whether that translates into stockpiling in the near term, tightening the market more than a simple calculation of demand would show, is another area of uncertainty.



Source: SFA (Oxford), Bloomberg Finance LP

**THE PGM MARKETS
IN 2025/26**



The PGM markets in 2025/26

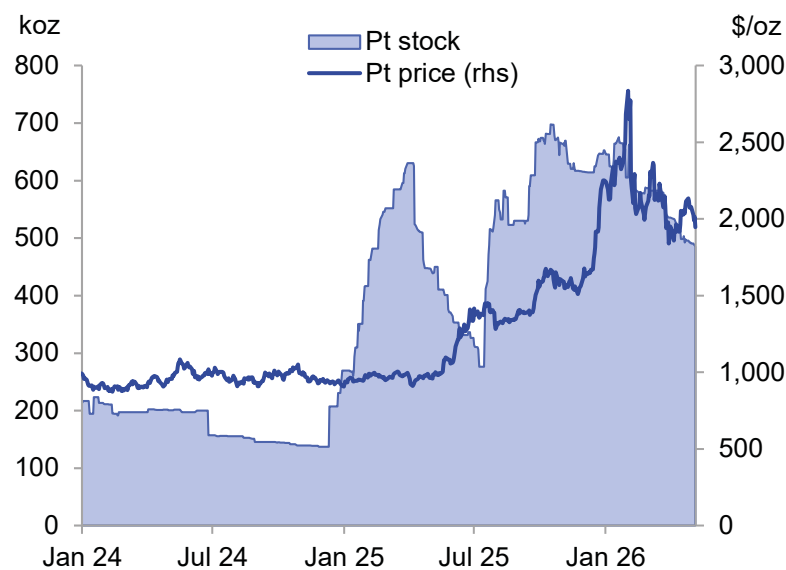
Dr. Ralph Grimble, SFA (Oxford)

The platinum market

The platinum market had a deficit of 645 koz in 2025, owing to a combination of lower supply, due to declining production in North America and lower output from South Africa, and higher demand, with greater industrial requirements and jewellery usage more than offsetting lower automotive demand.

The platinum market was in deficit in 2025

NYMEX platinum stock



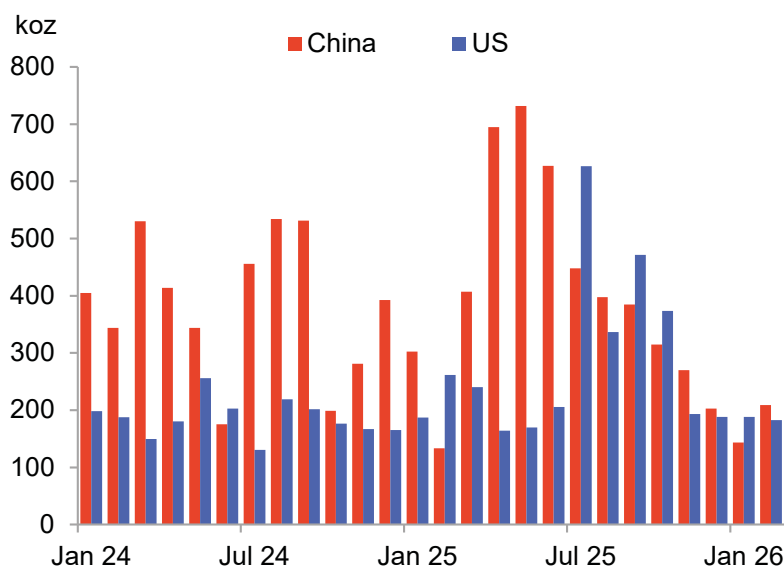
Source: SFA (Oxford), Bloomberg Finance LP

However, events beyond those that directly impacted the supply-demand balance came to the fore in 2025, with stock movements reducing liquidity in traditional trading centres. Platinum held in NYMEX vaults surged in the first few months of the year on concerns that tariffs would be imposed on US imports of precious metals. Precious metals were excluded from President Trump's April tariff announcement and some of the metal was subsequently withdrawn, but the flow reversed again in July and the stocks increased over the remainder of the year.

Stock movements impacted market liquidity

Meanwhile, in China platinum imports jumped in the second quarter on stock-building by jewellery fabricators and investor interest. Net platinum imports into the US were also higher than typical, particularly in the third quarter of the year. In November, the Guangzhou Futures Exchange began trading in platinum and palladium futures. Trading volumes exploded in the second half of December as the platinum price rallied sharply. The exchange has said it will publish stock information but has not yet done so. The first contract is for June 2026, with a significant proportion expected to be closed with physical delivery.

Platinum imports



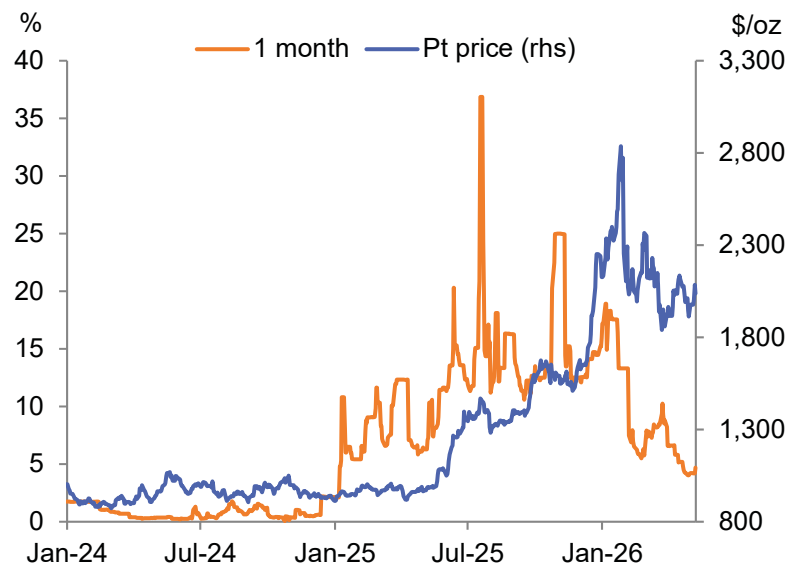
Source: SFA (Oxford), Trade Data Monitor

Lease rates increased early in the year but the platinum price traded sideways, mostly holding between \$900/oz and \$1,000/oz until May when it started to rally. With larger trade flows than usual moving metal to China and then into the US, lease rates moved sharply higher, spiking in July and remaining elevated for the rest of the year as the platinum price climbed further. The gold price had been climbing for several years and platinum’s discount to gold exceeded \$2,500/oz, making platinum historically cheap relative to gold. The platinum price ended the year at \$2,043/oz, having reached a record \$2,473/oz in December, more than doubling from the start of the year.

The platinum market tightened in 2025...

...and the price hit a record high

Platinum lease rate



Source: SFA (Oxford), Bloomberg Finance LP

The platinum market deficit is forecast to shrink in 2026 to 250 koz. Total supply is predicted to edge lower as primary supply contracts which outweighs a slight expansion in recycling. However, demand is anticipated to drop by more than supply as automotive, jewellery and industrial uses all shrink.

Platinum remains in deficit in 2026

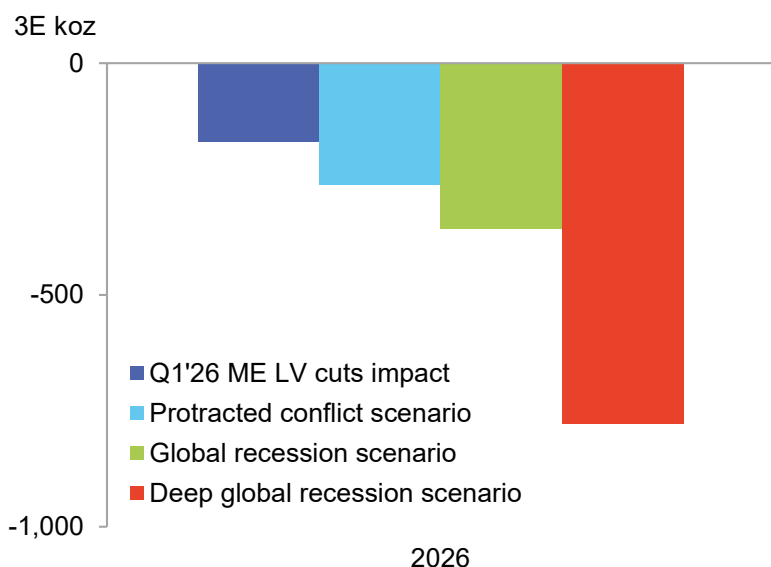
The war with Iran has resulted in the closure of the Strait of Hormuz which cut off around 20% of global crude oil and natural gas supply, as well as a significant share of aluminium, urea, sulphur and helium production. The full impact of the supply shock on the global economy has yet to be felt. The situation is still evolving and the longer the strait is closed, the greater the risk that rather than consumers just having to contend with higher inflation, the economy tips into recession with negative implications for PGM demand and prices.

Middle East conflict has negative implications for the global economy

The initial downward revision to global light-vehicle production in the first quarter was -1.3 million units, for a loss of PGM demand of more than 150 koz 3E. In a protracted conflict scenario or a recession scenario, the impact would be greater and in a deep recession the loss of more than 750 koz 3E of automotive demand is possible. That could move all three PGM markets close to balance or push them into surplus if there were additional negative impacts on other demand segments.

PGM demand could shrink significantly

PGM auto demand impact of light-vehicle production cuts



Source: SFA (Oxford). ME = Middle East.

Mine supply

Global refined platinum production fell by 3.0% to 5,315 koz in 2025. In South Africa, platinum production fell by 3.3% to 3,820 koz, mostly owing to heavy rains in the first quarter of 2025 which caused flooding that impacted surface operations and the Amandelbult complex, reducing output there for around six months. North American output shrank by 18% to 205 koz owing to the restructuring at Stillwater and the progression to end-of-life at Impala Canada. In Zimbabwe, supply rose slightly to 510 koz, while in Russia output held steady at 675 koz.

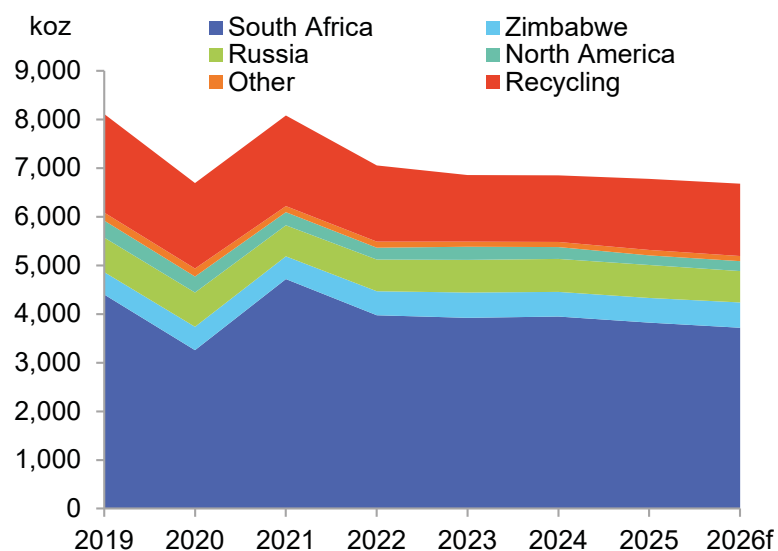
South African output contracted in 2025

This year, primary platinum supply is predicted to fall by 2.3% to 5,195 koz owing to declines in South Africa and Russia. Output in South Africa is predicted to fall by 2.7% to 3,715 koz, as depletion at some existing mines outweighs gains at other mines and the early-stage ramp-up of the Ivanplats project that produced its first concentrate in late 2025. South African production is now 600-700 koz lower than it was in the pre-Covid period. In Russia, Nor Nickel is temporarily processing lower-grade ore which depresses the platinum yield, reducing output to 645 koz.

Primary supply drops further in 2026

North American output is projected to remain steady at 200 koz. The end-of-life at Impala Canada was delayed to mid-2027 owing to the higher palladium price prevailing at the end of 2025.

Platinum supply



Source: SFA (Oxford)

Recycling

Secondary supply of platinum rose to 1,460 koz last year. Recycling volumes from spent automotive catalysts improved slightly in the first half of 2025 and more notably in the second half of the year. As palladium and rhodium prices followed platinum higher in the second half of the year, this incentivised greater volumes of material to be released by scrapyards that had stockpiled some catalysts waiting for higher prices.

Recycling has rebounded

In 2026, platinum recycling is projected to increase to 1,485 koz, as a dip in jewellery recycling partially offsets growth in autocatalyst volumes. The rise in the aluminium price and a strong scrap steel price are incentivising the collection and recycling of end-of-life vehicles and with PGM prices remaining elevated, the flow of autocatalysts to recyclers is expected to remain robust.

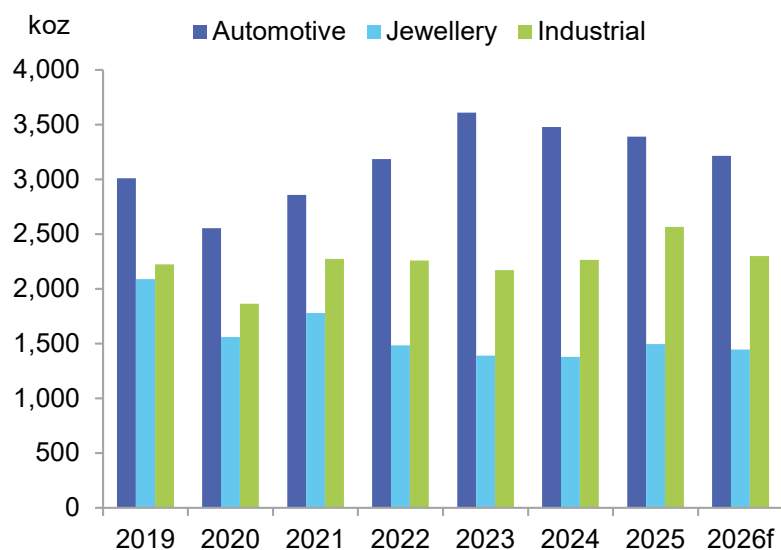
Demand

Global platinum demand (excluding investment) rose by 4.3% to 7,420 koz in 2025, supported by robust growth in industrial requirements and higher jewellery demand which more than offset slightly lower automotive demand.

Global platinum demand recovered in 2025 as jewellery and industrial demand increased

In 2026, gross platinum demand is predicted to fall back to 6,935 koz as automotive, industrial and jewellery demand are all anticipated to retreat. There is also a risk that the economic impact of higher prices resulting from the war in the Middle East will reduce consumer spending and further impede PGM demand.

Platinum demand



Source: SFA (Oxford)

Automotive demand

Automotive platinum demand slipped by 2.4% to 3,395 koz last year. Light-vehicle production increased by almost 3 million units, but with the continued expansion of BEV sales the number of ICE and hybrid vehicles produced fell slightly. Similarly, a modest rise in heavy-duty vehicle production was also offset by a greater number of BEVs being produced, resulting in an overall contraction in platinum requirements.

Automotive demand is on a declining trend

The global light-vehicle sales forecast has been revised down to 92.4 million units in 2026 owing to the impact of the conflict between the US and Iran. However, the longer the Strait of Hormuz remains closed, the greater the impact will be. Production in Iran has been disrupted and sales in the wider region have been negatively impacted by the conflict. There is also anticipated to be a negative impact on vehicle sales in other regions as inflation reduces consumers' disposable incomes and higher input costs lift auto prices, impacting affordability.

In 2026, automotive demand is estimated to drop by 5.3% to 3,215 koz. Once again BEV market share is expected to increase, resulting in lower platinum demand. In addition, some reverse substitution to palladium in gasoline autocatalysts is anticipated. As the platinum price is now trading at a premium to palladium, the amount of platinum used in the tri-metal gasoline catalysts is expected to begin to be reduced. Additionally, global HDV production is forecast to be slightly lower than in 2025.

Now that palladium is cheaper than platinum, a shift in autocatalyst formulation is likely

Jewellery demand

Jewellery demand grew by 8% in 2025 to 1,495 koz. The large price discount of platinum to gold led to Chinese fabricators restocking

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platinum in the second quarter and contributed to a jump in Chinese demand. Sales in other regions were variable and the increasing platinum price in the second half of the year was a drag on demand even though the discount to gold remained wide.

Platinum jewellery demand could dip this year despite the wide price discount to gold

This year, platinum jewellery demand is projected to slip to 1,445 koz. The enthusiasm for platinum from Chinese jewellery fabricators seen in 2025 is not expected to be repeated in 2026 owing to the difficulty of converting wholesale demand into consumer sales last year. A higher platinum price is also expected to weigh on sales in other regions. India has one of the faster growing economies despite the economic impact of the war in the Middle East and may see a modest pick-up in demand.

Industrial demand

Platinum requirements for industrial applications rose in 2025 to 2,480 koz as all the different industrial segments saw higher demand. Glass demand was supported by continued build-out in new fibreglass capacity in China last year. The transition to heat-assisted magnetic recording (HAMR) hard-drives started in 2025 and that helped to lift electrical demand as HAMR drives use more platinum than the current perpendicular magnetic recording (PMR) and shingled magnetic recording (SMR) drives.

Industrial usage was robust in 2025

In 2026, industrial platinum consumption is predicted to ease to 2,165 koz as the glass and chemical sectors experience reduced demand after a very strong year in 2025. Increasing demand from data centres and further growth in HAMR hard-drive sales are estimated to help lift electrical demand. The petroleum and medical sectors are also expected to see modestly higher demand in 2026.

Investment and movement of above-ground stocks

In the first half of 2025, global ETF holdings fluctuated moderately month-on-month and rose by 30 koz overall. As the platinum price accelerated higher in the second half of the year, the swings in holdings increased as there was profit-taking in some months and accumulation in other months. This ultimately left ETF holdings 39 koz higher than at the start of the year, at 3.25 moz. Bar and coin sales had a strong year, helped by a significant increase in China which more than offset declines in other regions. In Japan, profit-taking as the platinum price in yen surged higher resulted in a net supply of bars.

Global investment demand was positive

The price rallied to a record high in January, with ETF holdings rising by 54 koz. However, that was followed by a sharp pull-back and significant profit-taking, particularly in the US, and global ETF holdings fell by 356 koz over the next three months.

The palladium market

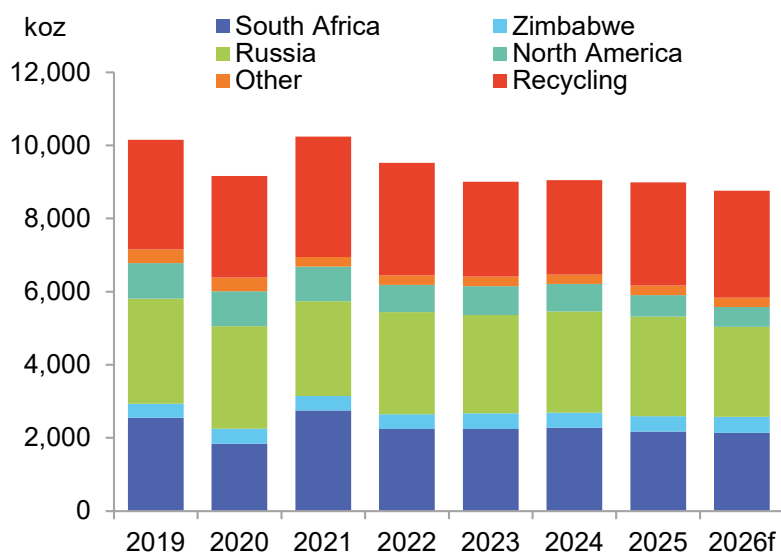
In 2025, the palladium market had a 465 koz deficit (excluding investment). Although secondary supply staged a recovery and gross demand slipped back, primary supply fell by 4.6%, leaving the market with a slightly smaller deficit than in 2024. Palladium ETF holdings grew by 368 koz in 2025 as the rising price encouraged investors to increase their exposure.

The market deficit is predicted to expand in 2026 owing to a further decline in automotive demand and lower primary supply more than offsetting a further rise in secondary supply. However, the longer it takes to resolve the conflict between the US and Iran, the worse the impact on commodity prices will be and the risk is that the global economy is tipped into recession, reducing PGM demand.

The palladium market deficit could expand in 2026

Primary palladium supply fell to 6,165 koz last year owing to reduced output in South Africa, Russia and North America. Restructuring at the Stillwater operations in Montana, the approaching end-of-life at Impala Canada and slightly lower by-product production from nickel mining resulted in North American supply falling by 22% to 590 koz. Heavy rain in South Africa in the first quarter caused some flooding which particularly impacted the Amandelbult mine and resulted in lower palladium production. In Russia, Nornickel processed higher volumes of lower-grade disseminated ore.

Palladium supply



Source: SFA (Oxford)

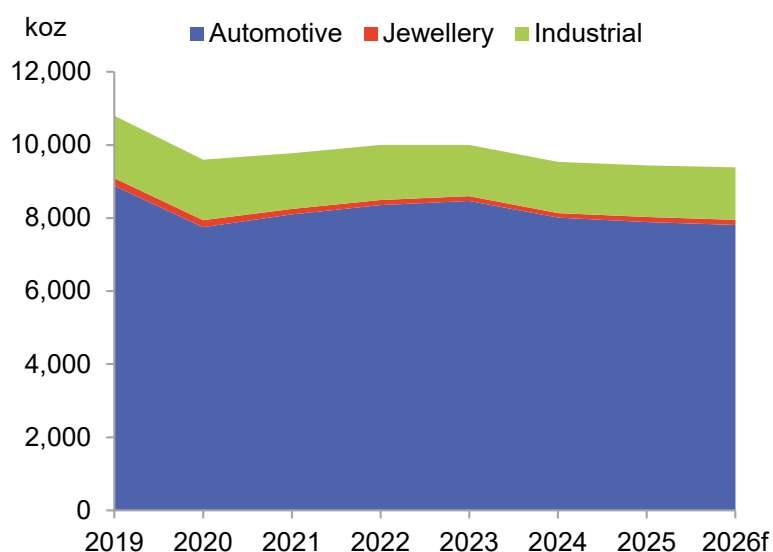
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Secondary palladium supply rose by 9% to 2,815 koz. In the US, recycling volumes of spent autocatalysts improved as the year progressed, lifted by the rising palladium price. The depressed PGM prices of the prior two years had resulted in some scrapyards holding on to material, waiting for higher prices which finally arrived in the second half of the year. In China, the subsidy for scrapping an old car when buying a new one helped to maintain a robust flow of end-of-life vehicles to scrapyards.

Recycled palladium increased in 2025

Gross palladium demand was 9,445 koz last year, a modest 1.1% lower than in 2024, as automotive demand shrank further while jewellery and industrial requirements were slightly higher.

Palladium demand



Source: SFA (Oxford)

Automotive palladium demand in 2025 decreased by 1.6% to 7,885koz as ICE and hybrid vehicles lost more market share to BEVs which exceeded 17% of global car sales. The main exception to the ongoing increase in BEV market share was the US, where the removal of the tax credits for BEVs resulted in a surge in BEV sales in the third quarter and a slump in the fourth quarter. Despite US consumers having to contend with tariffs on new car imports and increasing economic uncertainty, overall light-vehicle sales in the country rose by 2% to 16.3 million units. The BEV share of US light-vehicle sales was 7.5% down, from 7.9% in 2024.

Automotive demand is shrinking as BEVs continue to gain market share

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Global light-vehicle sales are predicted to slip back to 92.4 million units this year, from 93.0 million in 2025, owing to the negative economic impact of the conflict between the US and Iran and the resulting rise in energy and other commodity prices. A partial offset to that is that Chinese manufacturers have a relatively low cost base and have been expanding their exports rapidly, as sales growth has slowed in their domestic market which has become increasingly competitive, making affordable vehicles available in many markets.

ICE and hybrid light-vehicle production is declining

Global palladium demand is projected to drop by 0.4% to 9,405 koz this year. Palladium use in electrical contacts is expected to get a boost as the very high gold price leads to some substitution to palladium, helping to lift industrial palladium requirements. However, automotive demand continues to decline and, considering the uncertain economic outlook, the risks are to the downside.

In 2026, palladium requirements from the automotive industry are predicted to drop by 0.9% to 7,815 koz. Now that the palladium price is trading at a discount to platinum, a shift back to using more palladium and less platinum in gasoline catalysts is expected to offer some support to demand. However, the ongoing loss of the ICE and hybrid vehicle market share to BEVs and the wider economic situation are likely to result in a contraction in demand.

Primary palladium supply is forecast to decline by 5.4% this year to 5,835 koz, mostly owing to reduced yield in Russia as lower-grade ore is processed. Output from South Africa and North America is also projected to dip slightly.

Primary palladium output dips in 2026

Global secondary supply of palladium is predicted to rise by 4% to 2,920 koz in 2026. The environment remains favourable for recycling as scrap metal prices remain high and the palladium and rhodium prices are trading well above their levels of a year ago. However, should the economic situation deteriorate, new vehicle sales and PGM prices could be lower than anticipated which would result in reduced recycling.

Secondary palladium supply is expected to expand further this year

The rhodium market

The rhodium market is estimated to have had a deficit of 75 koz in 2025. This year, the deficit is projected to shrink to 40 koz as net demand falls slightly more than primary supply.

Rhodium market is set to remain in deficit in 2026

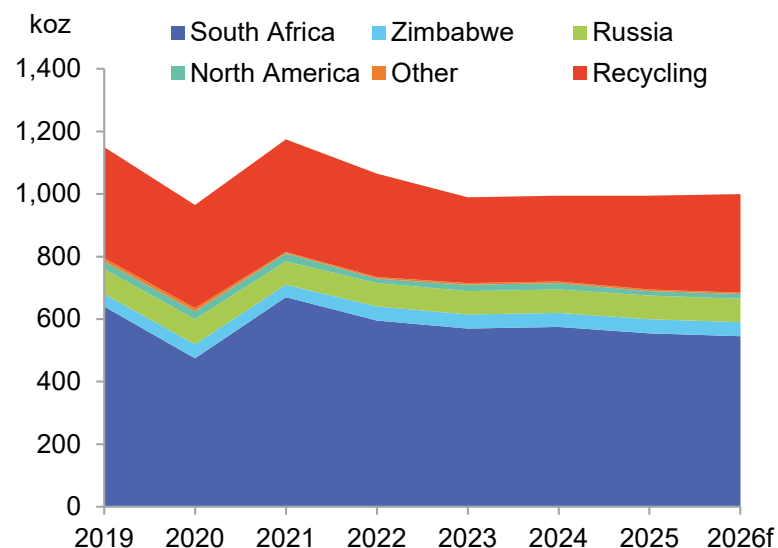
Gross rhodium demand rose by 3% to 1,075 koz in 2025, as higher industrial demand, due to the return of net demand from the glass industry after a period of stock sales, more than offset a contraction in automotive demand.

Automotive rhodium demand slipped by 10 koz to 925 koz last year. Although BEVs continued to gain market share, it was not as fast as forecasts had suggested, so ICE and hybrid light-vehicle production, and hence rhodium demand, held up better than anticipated at the start of the year.

Automotive demand dropped slightly in 2025 as BEVs took market share

Primary production of rhodium fell by 2% to 700 koz, mostly owing to lower output in South Africa where flooding in the first quarter impacted output from the Amandelbult mine, with production taking about six months to get back to steady state. Output in North America shrank following restructuring at Stillwater which reduced mined volumes. Secondary supply picked up as the higher PGM prices in the second half of the year resulted in improved material flows along the recycling value chain.

Rhodium supply



Source: SFA (Oxford)

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Gross rhodium consumption is projected to decline by 3% to 1,040 koz in 2026. Industrial rhodium requirements are predicted to be little changed in 2026 as slightly higher chemical demand is offset by lower glass requirements, while automotive demand contracts further.

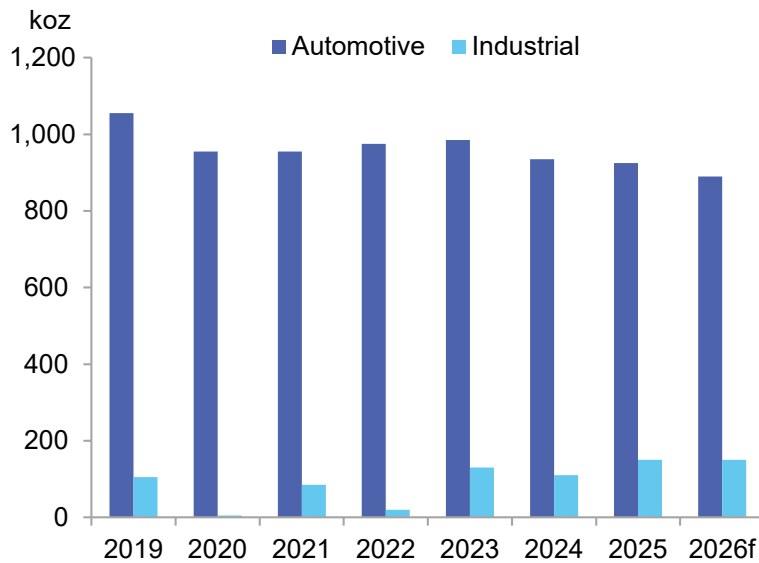
Automotive demand declines further in 2026

Automotive demand for rhodium is forecast to decrease by 4% to 890 koz this year. BEVs are predicted to gain market share faster than overall light-vehicle sales expand, resulting in a contraction in ICE and hybrid vehicle production and rhodium demand. There is some potential upside if BEV sales undershoot forecasts once again. However, there is also downside risk if the impacts of inflation and the Middle East war tip the global economy into recession, causing lower vehicle sales and production.

In 2026, primary supply is estimated to slip by 2% to 685 koz, mostly as a result of South African output edging lower. Recycling is expected to rise further this year, supported by the higher level of rhodium and palladium prices and robust scrap steel and aluminium prices which encourage the collection of end-of-life vehicles.

Primary rhodium supply recedes in 2026

Rhodium demand



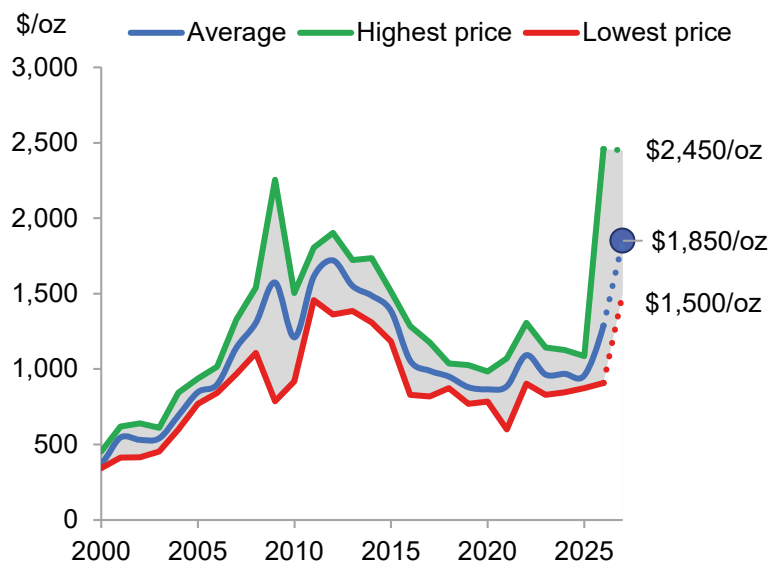
Source: SFA (Oxford)

The price outlook for the next six months

Platinum \$1,850/oz, volatility range \$1,500/oz - \$2,450/oz

The platinum market is predicted to remain in deficit this year and so the market fundamentals are price supportive. However, while the closure of the Strait of Hormuz has given the world a wake-up call and security of supply for energy and critical minerals is now top of the agenda and any stockpiling could tighten the market further, the risk is that the longer-term impacts will be negative for the global economy and ultimately reduce platinum demand. The platinum price has been correcting after reaching a record price in January and, considering the rapid nature of the price rally, that correction could continue for some time. SFA forecasts a six-month platinum price average of \$1,850/oz.

Platinum price

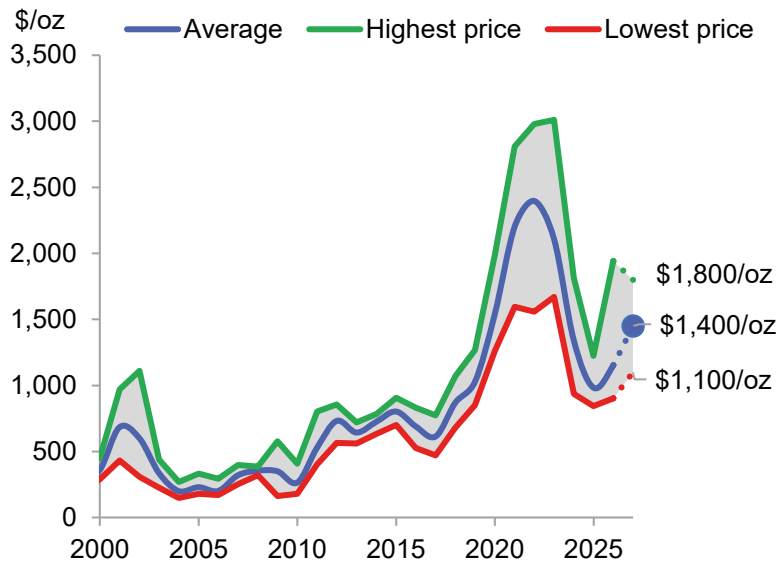


Source: SFA (Oxford)

Palladium \$1,400/oz, volatility range \$1,100/oz - \$1,800/oz

The palladium market is forecast to be in deficit this year, but that is partly owing to a temporary decline in Russian supply. Meanwhile, the ongoing loss of automotive demand is clearly a headwind, as ICE and hybrid light-vehicle production is predicted to drop once again as BEVs gain share faster than the overall market is growing. This trend could be given new impetus by the jump in fuel prices. Price risks appear to be to the downside as inflation raises costs and reduces consumers' disposable income, with a recession being a possible outcome. Palladium is forecast to average \$1,400/oz over the next six months.

Palladium price

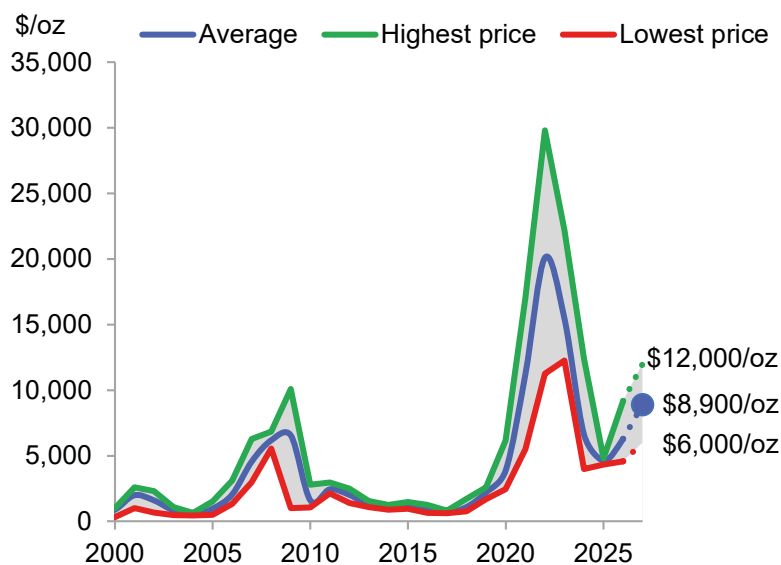


Source: SFA (Oxford)

Rhodium \$8,900/oz, volatility range \$6,000/oz - \$12,000/oz

The rhodium market is expected to remain in deficit in 2026, although a smaller deficit than in 2025, as demand contracts while overall supply is little changed, with growth in recycling offsetting a decline in primary output. As with palladium, rhodium demand continues to shrink owing to the metal's significant exposure to autocatalysts as BEVs gain market share. The rhodium price lagged the platinum price and continued to rally in February but has now pulled back and a six-month average price of \$8,900/oz is forecast.

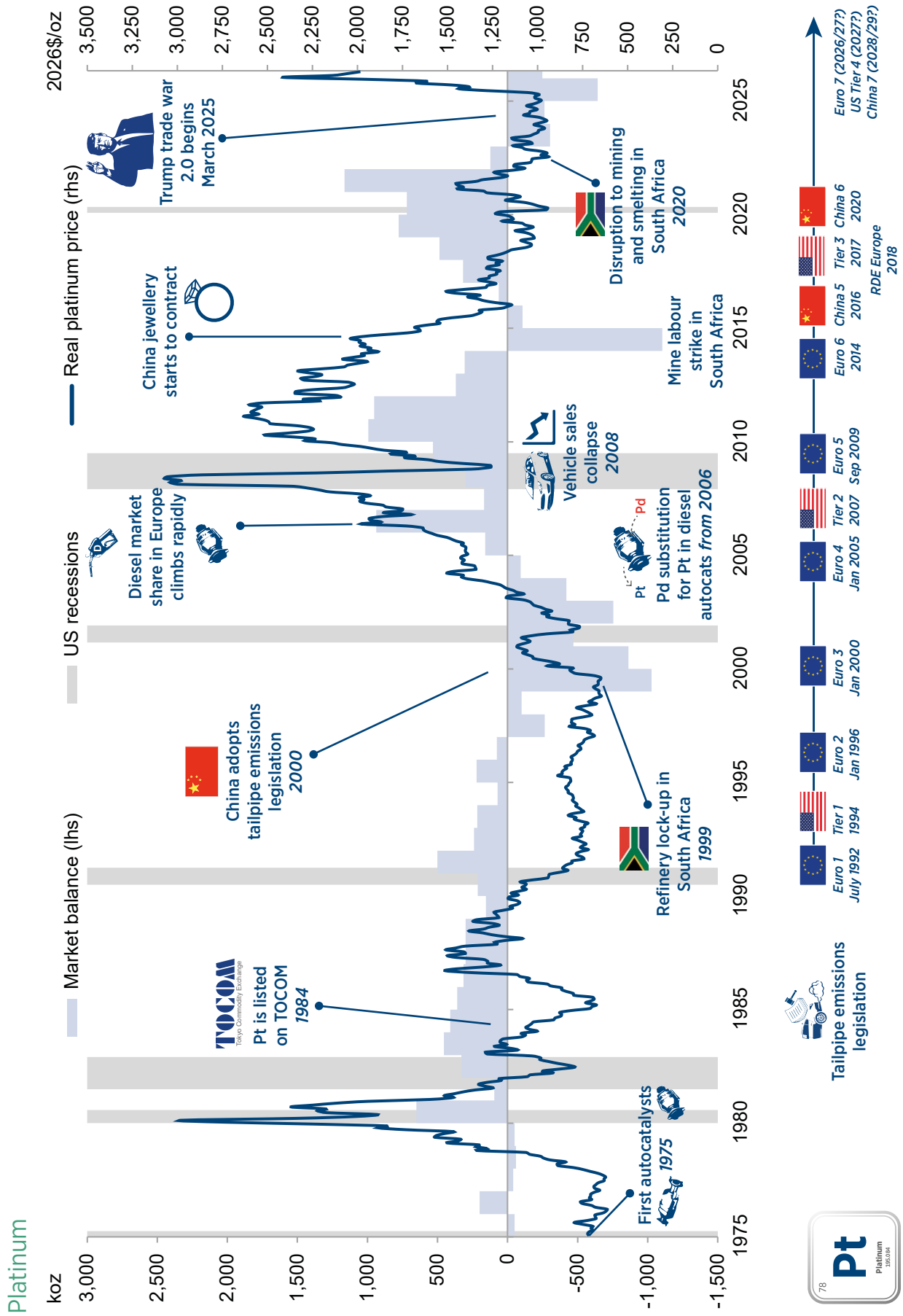
Rhodium price



Source: SFA (Oxford)

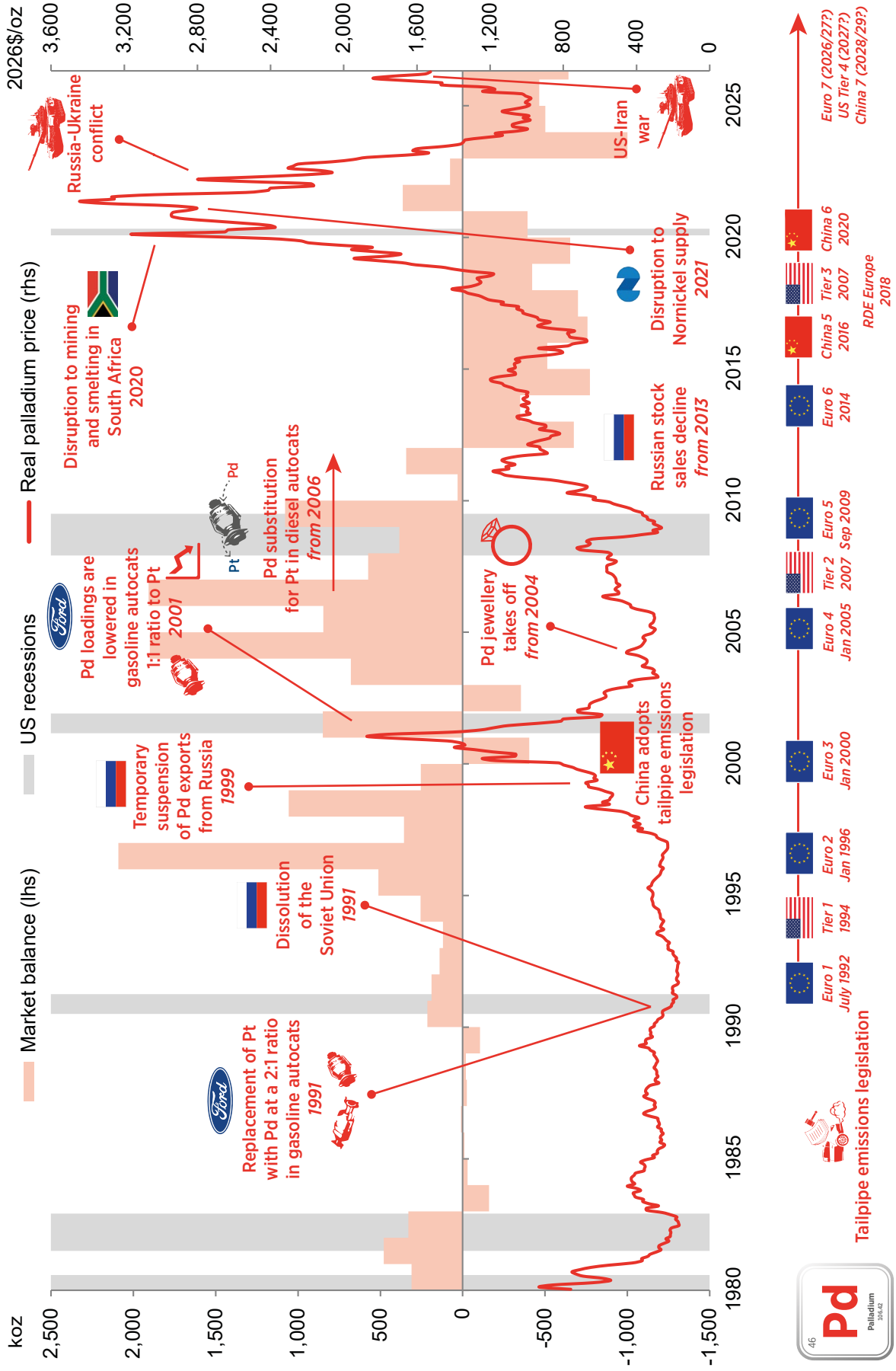
PGM PRICE HISTORY



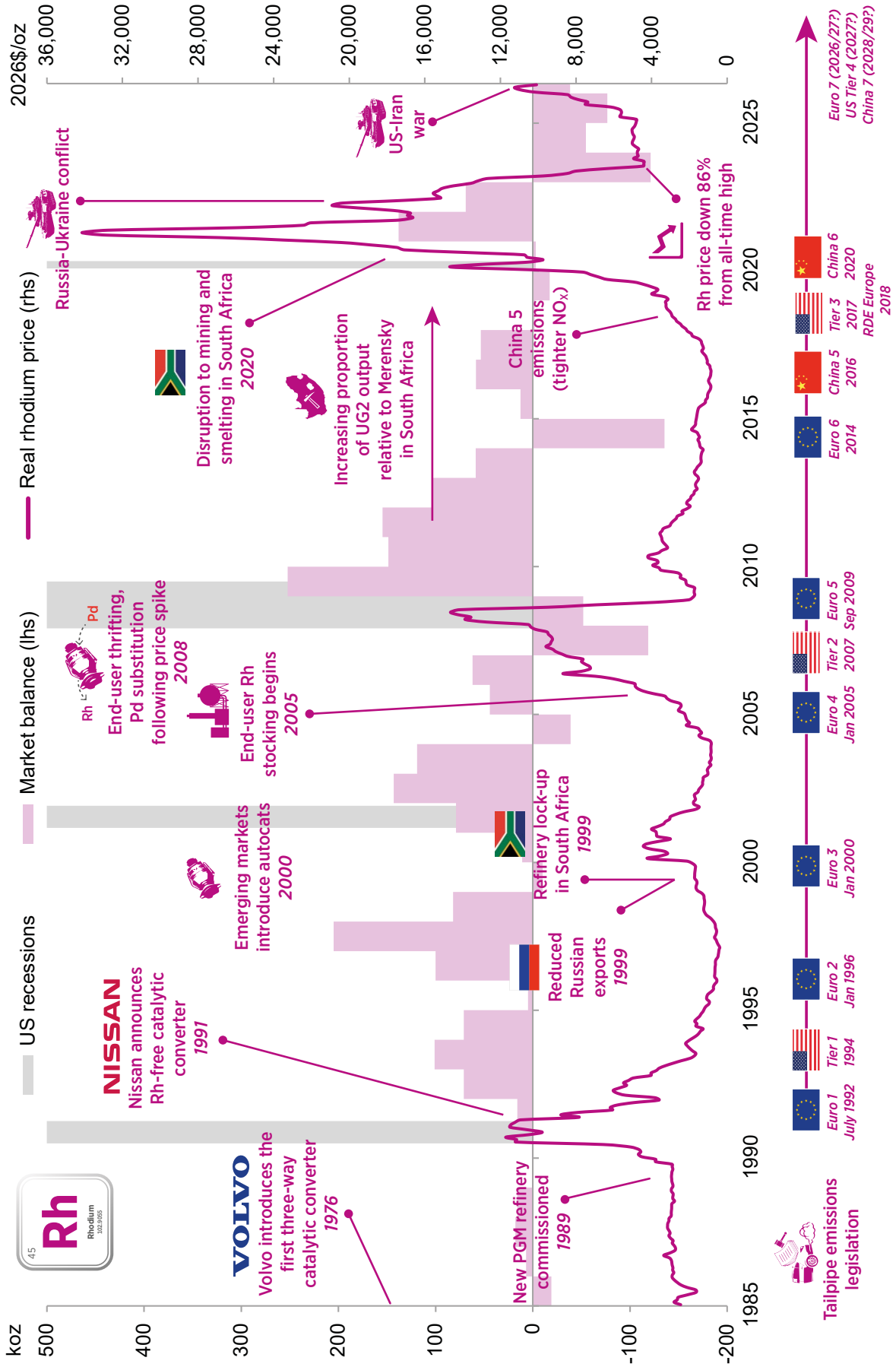


Source: SFA (Oxford), Bloomberg Finance LP

Palladium



Rhodium



Source: SFA (Oxford), Bloomberg Finance LP

APPENDIX



Platinum supply-demand balance

koz	2018	2019	2020	2021	2022	2023	2024	2025	2026f
Primary supply									
Regional									
South Africa	4,470	4,405	3,260	4,715	3,975	3,920	3,950	3,820	3,715
Russia	665	710	700	640	655	670	675	675	645
Zimbabwe	465	460	480	470	490	520	505	510	525
North America	345	350	330	265	250	270	250	205	200
Other	180	160	165	125	120	110	105	110	105
Total	6,130	6,085	4,940	6,220	5,485	5,490	5,485	5,315	5,195
Demand & recycling									
Autocatalyst									
Gross demand	3,130	3,010	2,550	2,865	3,185	3,610	3,480	3,395	3,215
Recycling	1,420	1,495	1,310	1,425	1,280	1,080	1,070	1,125	1,180
Net demand	1,710	1,515	1,240	1,440	1,900	2,530	2,410	2,265	2,035
Jewellery									
Gross demand	2,245	2,090	1,560	1,780	1,485	1,390	1,380	1,495	1,445
Recycling	505	500	410	400	250	245	250	290	260
Net demand	1,740	1,595	1,150	1,380	1,235	1,145	1,130	1,205	1,185
Industrial demand	2,150	2,185	1,850	2,255	2,240	2,115	2,170	2,480	2,165
Hydrogen	70	40	15	20	25	45	80	55	110
Other recycling	30	30	30	45	40	40	45	45	45
Gross demand	7,595	7,330	5,975	6,920	6,935	7,160	7,115	7,420	6,935
Recycling	1,955	2,025	1,755	1,865	1,570	1,365	1,370	1,460	1,485
Net demand	5,640	5,305	4,220	5,055	5,365	5,795	5,745	5,960	5,445
Market balance									
Balance (before ETFs)	485	775	720	1,165	125	-305	-265	-645	-250
ETFs (stock allocation)	-240	995	505	-265	-560	-80	265	40	
Balance after ETFs	730	-220	215	1,430	685	-220	-530	-685	-250
Prolonged conflict scenario									-190
Global recession scenario									-175
Deep global recession scenario									-150

Source: SFA (Oxford)



Platinum demand and recycling summary

koz	2018	2019	2020	2021	2022	2023	2024	2025	2026f
Gross demand									
Autocatalyst									
North America	390	375	285	395	535	605	640	600	570
Western Europe	1,355	1,290	990	885	945	1,050	915	845	780
Japan	425	395	300	280	275	305	300	310	280
China	220	275	465	565	525	575	555	595	545
India	200	160	115	175	225	225	225	240	240
RoW	545	515	400	560	680	845	840	805	795
Total	3,130	3,010	2,550	2,865	3,185	3,610	3,480	3,395	3,215

Source: SFA (Oxford)

Platinum demand and recycling summary (continued)

koz	2018	2019	2020	2021	2022	2023	2024	2025	2026f
Gross demand									
Jewellery									
North America	280	275	210	255	265	250	260	250	235
Western Europe	255	260	175	190	225	220	230	265	275
Japan	345	330	245	260	270	255	260	245	235
China	1,095	945	755	875	510	435	390	485	445
India	195	210	120	135	160	165	175	180	185
RoW	75	75	55	60	60	65	65	65	70
Total	2,245	2,090	1,560	1,780	1,485	1,390	1,380	1,495	1,445
Industrial									
North America	435	345	295	380	385	400	410	415	410
Western Europe	345	315	300	50	290	295	300	295	295
Japan	110	110	150	150	105	105	90	105	95
China	715	830	670	1,015	895	725	820	1,070	720
RoW	550	585	440	665	570	600	550	590	640
Total	2,150	2,185	1,850	2,255	2,240	2,115	2,170	2,480	2,165
Hydrogen	70	40	15	20	25	45	80	55	110
Total gross demand									
North America	1,100	995	785	1,035	1,180	1,255	1,305	1,270	1,220
Western Europe	1,955	1,860	1,460	1,125	1,455	1,565	1,450	1,405	1,350
Japan	875	835	695	690	655	665	645	660	610
China	2,030	2,050	1,885	2,455	1,930	1,735	1,770	2,150	1,710
RoW	1,565	1,545	1,130	1,595	1,690	1,900	1,860	1,885	1,930
Total	7,595	7,330	5,975	6,920	6,935	7,160	7,115	7,420	6,935
Recycling									
Autocatalyst									
North America	640	640	560	570	475	370	365	375	375
Western Europe	465	515	445	520	465	385	375	395	410
Japan	110	110	105	115	105	110	105	110	110
China	35	40	30	35	40	30	35	40	45
RoW	170	190	170	185	190	185	190	210	240
Total	1,420	1,495	1,310	1,425	1,280	1,080	1,070	1,125	1,180
Jewellery									
North America	5	5	5	5	5	5	5	5	5
Western Europe	5	5	5	5	5	5	5	5	5
Japan	145	140	110	115	105	105	115	130	110
China	340	340	285	265	125	120	115	140	130
RoW	5	10	10	10	10	10	10	10	10
Total	505	500	410	400	250	245	250	290	260
WEEE	30	30	30	45	40	40	45	45	45
Hydrogen	0	0	0	0	0	0	0	0	5
Total recycling									
North America	650	650	575	580	490	385	380	385	390
Western Europe	480	530	455	535	480	400	390	410	425
Japan	260	255	215	235	215	215	225	240	225
China	380	385	320	305	170	160	160	190	185
RoW	185	205	190	210	210	205	215	235	260
Total	1,955	2,025	1,755	1,865	1,570	1,365	1,370	1,460	1,490

Source: SFA (Oxford)



Palladium supply-demand balance

koz	2018	2019	2020	2021	2022	2023	2024	2025	2026f
Primary supply									
Regional									
South Africa	2,500	2,555	1,845	2,755	2,240	2,245	2,275	2,175	2,140
Russia	2,670	2,870	2,810	2,585	2,790	2,690	2,760	2,725	2,465
Zimbabwe	380	385	405	395	410	430	420	420	435
North America	1,035	975	950	950	740	785	755	590	540
Other	390	375	375	265	265	260	255	260	255
Total	6,975	7,160	6,385	6,955	6,450	6,415	6,465	6,165	5,835
Demand & recycling									
Autocatalyst									
Gross demand	8,340	8,875	7,750	8,090	8,355	8,470	8,010	7,885	7,815
Recycling	2,410	2,565	2,395	2,840	2,670	2,215	2,210	2,430	2,595
Net demand	5,935	6,310	5,355	5,255	5,685	6,255	5,800	5,455	5,220
Jewellery									
Gross demand	220	210	195	155	140	130	125	140	140
Recycling	60	55	50	40	35	30	30	35	35
Net demand	155	155	145	115	105	100	95	100	110
Industrial demand	1,840	1,715	1,640	1,620	1,490	1,380	1,385	1,395	1,415
Hydrogen	0	0	10	20	20	25	30	30	30
Other recycling	370	365	335	415	365	350	345	350	290
Gross demand	10,400	10,805	9,590	9,885	10,005	10,010	9,550	9,445	9,405
Recycling	2,845	2,990	2,780	3,295	3,070	2,595	2,585	2,815	2,920
Net demand	7,555	7,820	6,815	6,595	6,935	7,415	6,965	6,635	6,485
Market balance									
Balance (before ETFs)-580	-655	-425	365	-485	-1,000	-500	-465	-645	
ETFs (stock allocation)-565	-85	-115	40	-90	75	240	370		
Balance after ETFs	-15	-570	-310	325	-395	-1,075	-745	-830	-645
Prolonged conflict scenario									-465
Global recession scenario									-400
Deep global recession scenario									-30

Source: SFA (Oxford)



Palladium demand and recycling summary

koz	2018	2019	2020	2021	2022	2023	2024	2025	2026f
Gross demand									
Autocatalyst									
North America	1,860	1,815	1,460	1,620	1,670	1,805	1,805	1,755	1,715
Western Europe	1,730	1,960	1,490	1,465	1,635	1,765	1,590	1,445	1,395
Japan	840	870	760	720	715	735	665	680	635
China	1,940	2,290	2,460	2,135	1,810	1,600	1,360	1,420	1,400
India	320	285	235	335	410	410	425	455	475
RoW	1,655	1,650	1,345	1,820	2,110	2,155	2,170	2,130	2,195
Total	8,340	8,875	7,750	8,090	8,355	8,470	8,010	7,885	7,815
Jewellery									
North America	35	35	35	30	25	25	25	25	25
Western Europe	55	55	50	40	35	35	30	40	40
Japan	50	50	45	35	30	30	30	30	30
China	55	50	45	35	35	30	30	30	30
RoW	25	25	20	15	15	15	15	15	15
Total	220	210	195	155	140	130	125	140	140
Industrial									
North America	305	295	245	250	245	225	230	215	210
Western Europe	295	290	260	260	250	235	235	225	225
Japan	335	300	255	245	235	205	200	200	190
China	485	415	485	510	420	380	380	395	425
RoW	420	415	395	350	340	335	335	355	360
Total	1,840	1,715	1,640	1,620	1,490	1,380	1,385	1,395	1,415
Hydrogen									
	0	0	10	20	20	25	30	30	30
Total gross demand									
North America	2,200	2,150	1,740	1,900	1,940	2,055	2,055	1,995	1,950
Western Europe	2,075	2,305	1,800	1,765	1,920	2,035	1,860	1,710	1,660
Japan	1,225	1,220	1,055	1,000	985	965	895	910	860
China	2,480	2,760	2,990	2,685	2,265	2,010	1,770	1,845	1,855
RoW	2,420	2,375	1,995	2,520	2,880	2,915	2,940	2,955	3,045
Total	10,400	10,805	9,590	9,885	10,005	10,010	9,550	9,445	9,405
Recycling									
Autocatalyst									
North America	1,360	1,430	1,370	1,580	1,355	1,085	1,065	1,170	1,230
Western Europe	475	480	445	550	505	390	380	395	410
Japan	180	200	190	215	210	220	210	210	210
China	155	165	150	180	245	185	220	270	325
RoW	240	290	240	315	350	335	340	380	415
Total	2,410	2,565	2,395	2,840	2,670	2,215	2,210	2,430	2,595
Jewellery									
Japan	15	15	15	10	10	5	5	10	5
China	45	40	35	30	25	25	25	30	25
Total	60	55	50	40	35	30	30	35	35
WEEE									
North America	70	70	60	70	60	55	55	55	45
Western Europe	80	75	70	75	70	65	60	60	50
Japan	125	120	110	120	110	100	100	100	80
China	40	45	45	60	55	60	60	65	60
RoW	60	60	55	90	70	70	65	70	60
Total	370	365	335	415	365	350	345	350	290
Total recycling									
North America	1,430	1,495	1,435	1,645	1,420	1,145	1,120	1,225	1,275
Western Europe	550	555	510	625	575	455	440	455	460
Japan	320	340	310	350	330	330	320	320	295
China	240	250	230	270	325	265	305	365	410
RoW	295	345	295	405	425	400	405	445	475
Total	2,845	2,990	2,780	3,295	3,070	2,595	2,585	2,815	2,925



Rhodium supply-demand balance

koz	2018	2019	2020	2021	2022	2023	2024	2025	2026f
Primary supply									
Regional									
South Africa	625	640	475	670	595	570	575	555	545
Russia	75	80	80	75	75	75	75	75	75
Zimbabwe	40	40	45	40	45	45	45	45	45
North America	20	20	20	20	15	20	15	15	15
Other	10	10	10	5	5	5	5	5	5
Total	770	790	630	815	735	715	715	700	685
Demand & recycling									
Autocatalyst									
Gross demand	910	1,055	955	955	975	985	935	925	890
Recycling	335	350	325	360	325	275	270	295	315
Net demand	570	705	630	595	645	710	665	630	575
Industrial demand	205	105	5	85	20	130	110	150	150
Other recycling	2	2	2	3	3	2	3	3	2
Gross demand	1,110	1,160	960	1,040	995	1,115	1,045	1,075	1,040
Recycling	340	355	330	360	330	275	275	300	315
Net demand	775	810	630	675	665	835	770	775	720
Market balance									
Balance (before ETFs)	0	-15	-5	140	70	-120	-55	-75	-40
ETFs (stock allocation)	-50	-15	-10	-5	0	0	0	0	
Balance after ETFs	45	-5	5	140	70	-120	-55	-75	-40
Prolonged conflict scenario									-20
Global recession scenario									-10
Deep global recession scenario									10

Source: SFA (Oxford)



Rhodium demand and recycling summary

koz	2018	2019	2020	2021	2022	2023	2024	2025	2026f
Gross demand									
Autocatalyst									
North America	225	220	175	190	205	210	210	210	195
Western Europe	230	320	245	240	255	280	255	235	220
Japan	130	130	110	100	100	105	95	100	90
China	150	205	275	235	195	155	135	145	140
India	25	25	20	25	35	30	35	35	35
RoW	150	155	125	160	185	200	205	205	205
Total	910	1,055	955	955	975	985	935	925	890
Industrial									
North America	35	30	-15	0	25	30	30	30	35
Western Europe	20	15	-20	10	10	15	15	15	15
Japan	10	10	10	10	10	10	10	10	10
China	105	30	10	45	-50	45	30	65	60
RoW	30	20	25	25	25	30	30	30	35
Total	205	105	5	85	20	130	110	150	150
Total gross demand									
North America	265	250	160	190	230	240	240	235	230
Western Europe	250	335	225	250	265	290	270	250	230
Japan	140	140	120	110	110	115	110	110	105
China	255	240	285	280	145	205	160	210	205
RoW	205	200	170	210	245	265	270	270	275
Total	1,110	1,160	960	1,040	995	1,115	1,045	1,075	1,040
Recycling									
Autocatalyst									
North America	180	185	175	190	165	130	130	145	150
Western Europe	60	65	60	70	65	50	50	50	55
Japan	45	45	40	45	40	40	40	40	35
China	5	5	5	10	15	10	15	15	20
RoW	45	50	45	45	45	45	45	45	50
Total	335	350	325	360	325	275	270	295	315

Source: SFA (Oxford)



METHODOLOGY

Primary supply is calculated from actual mine production and excludes the sale of stock in order to provide pure production data. Stock sales are treated separately in SFA's database as movement of stocks. Therefore, state stock sales from Russia are excluded in tabulations.

Gross demand is a measure of intensity of use.

Net demand is a measure of the theoretical requirement for new metal, i.e. net of recycling.

Automotive demand is based on vehicle production data not sales.

ACKNOWLEDGEMENTS

SFA (Oxford) would like to thank all those whose hard work contributed to turning what began as an ambitious idea into the finished report you now see in front of you.

In particular, we would like to acknowledge our team:

Alex Biddle	Alison Clapton
Beresford Clarke	David Mobbs
Henk de Hoop	Ismet Soyocak
Jamie Underwood	Jenny Watts
Jo Holmes	Oliver Osborne
Lakshya Gupta	Oksan Atilan
Ralph Grimble	Rj Coetzee
Shunjie Zhao (Tony)	Thomas Chandler
Yoshimi Mizoguchi Owen	

We thank Janice Hurst and Karen Darley for proofreading *The Platinum Standard* throughout its production.

Then there are our third-party data suppliers: GlobalData, Oxford Economics, Bloomberg, and Trade Data Monitor whose data form the basis of many of the charts in this report.

Finally, to our clients and all those who have supported us throughout our time in business, we would like to dedicate this report as a mark of our gratitude for your continuing support.

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