Appendix C – Market analysis

The geopolitical climate in 2024 remained fraught with unexpected election results, continuing wars in Ukraine and the Middle East and numerous 'tit-for-tat' and protectionist import tariffs announced by global trading behemoths. The global macro-economy, however, delivered steady growth, seemingly navigating this complex environment at a low-and-slow rate of output. This performance largely surprised due to the upside, despite fiscal fragilities, slowing disinflation and still-restrictive global interest rates.

The July 2024 update to the International Monetary Fund's (IMF's) World Economic Outlook projected global economic growth of 3.2% and 3.3% in 2024 and 2025, respectively, unchanged for 2024 and nudged slightly higher in 2025 from the April 2024 update. Global growth remains supported by the Eastern Hemisphere powerhouses, China and India. Meanwhile, in the US there are increasing signs of economic cooling, particularly evident in the labour market. In Europe, resilient employment, still-high wage growth and household spending rates should continue to support low but steady growth.

Growth and inflation continue to face risks with implications for the timing and pace of rate cuts, which are seen as integral to the expected recovery in precious metal investor sentiment and pricing. Political and geopolitical risks and the potential impact for trade, industrial policy, fiscal dynamics and productivity, and the implications for inflation and rates, are likely to remain for much of the remainder of 2024 – resulting in persistent uncertainty and investor caution.

OVERVIEW

Lacklustre primary production and softer-than-expected secondary supply resulted in tighter-than-expected PGM markets in 2023, despite disappointing pricing over the period. Deficits in platinum, palladium and rhodium markets are estimated at 811 000, 1.32 million and 131 000 ounces, respectively. Pent-up demand and fading supply chain constraints supported significantly improved global light-vehicle production, which bolstered automotive offtake and offset lacklustre industrial demand for palladium and rhodium and softening investment demand for platinum.

Despite headline market deficits, significant pricing dislocations were caused by industrial and automotive end-users who destocked portions of their PGM inventory, as well as metal discounting as trade flows shifted from West to East. Negative precious metal investor sentiment and speculative positioning amplified these factors.

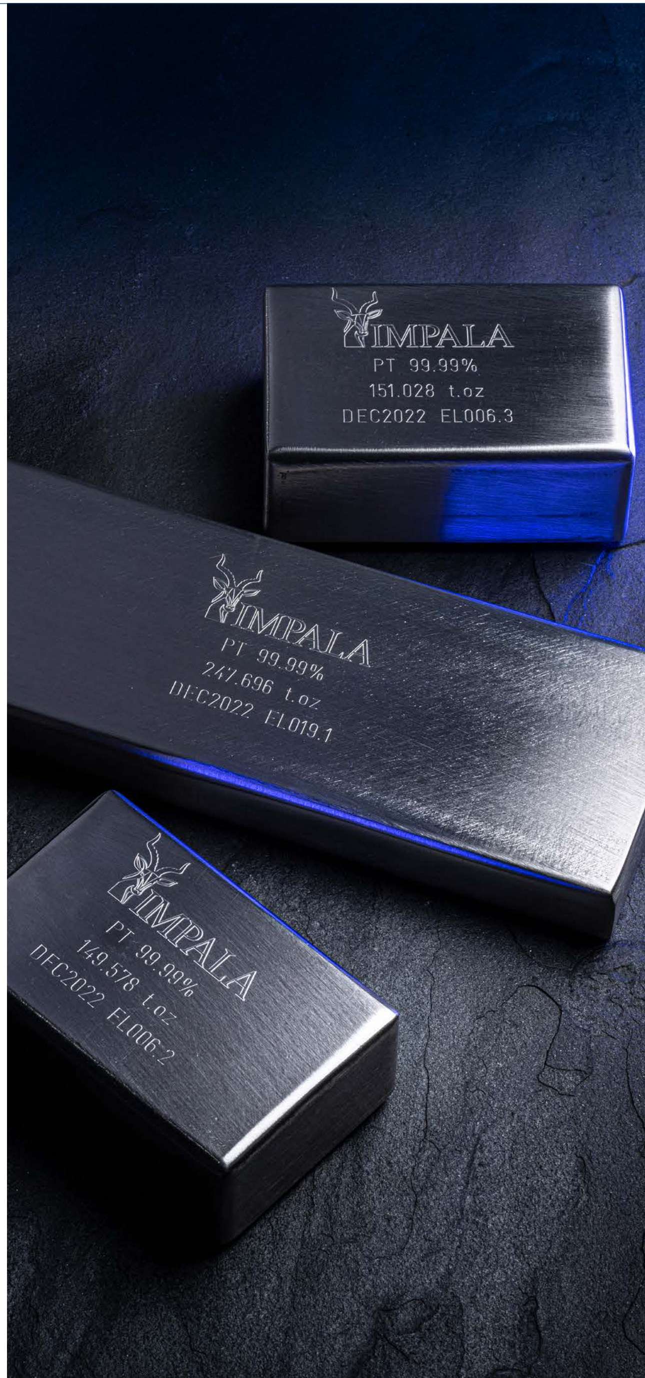
All three major PGM markets are likely to remain in fundamental deficits in 2024, although market shortfalls are expected to ease from those witnessed in 2023 – automotive production growth is expected to moderate, industrial demand is expected to be marginally lower as capacity expansions ease, and supply is expected to stage a modest recovery on improved auto catalyst scrap collections.

Our forecasts indicate fundamental deficits for each of the primary PGMs in 2024. However, the pricing impact of continued industrial and automotive original equipment manufacturer (OEM) destocking will continue to heavily influence physical market tightness over the remainder of the calendar year, as will the trajectory of monetary policy and interest rates in major developed economies.

PLATINUM PRICING

Platinum closed the financial year ended 30 June 2024 at US$1 002 per ounce, 13% higher than its starting point of US$898 per ounce. The average London trade price for the financial year was 4% softer at US$934 per ounce (FY2023: US$968 per ounce) – pricing peaked at US$1 065 per ounce and troughed at US$850 per ounce.

The 'pre-investment' surplus characteristic of the platinum market's recent history dissipated as automotive growth from switching, tightening heavy duty diesel demand and resilient offtake from the industrial sector met with softer-than-expected primary and secondary supply. Investor interest remains anaemic, however, with softening trade on the SGE, a record discount to gold and lacklustre ETF activity. The platinum price remains range-bound between US$900 and US$1 000 per ounce, with rand weakness weighing on price appreciation.



Ingot PGM bars

Appendix C – Market analysis continued

DEMAND

koz	2022	2023	2024	2025
Industrial	5 291	5 828	**5 920**	5 997
Automotive	2 749	3 264	**3 199**	3 285
Hydrogen and fuel cell electric vehicles (FCEV)	38	53	**109**	180
Other industrial	2 505	2 510	**2 612**	2 532
Jewellery	1 905	1 855	**1 900**	1 925
Investment	(342)	177	**9**	—
Total demand	6 854	7 860	**7 829**	7 922

2024 PLATINUM MARKET to remain in deficit

- **Demand** expected to increase by 5%
- Automotive to ease as LV production growth is skewed to BEVs
- Jewellery demand stabilising underpinned by India and the West Industrial supported by chemical and glass
- Positive YtD ETF inflows offset weaker Japanese bar and coin demand.

SUPPLY

	2022	2023	2024	2025
Primary	5 619	5 629	**5 649**	5 762
South Africa	4 031	3 998	**4 044**	4 111
Zimbabwe	485	512	**525**	523
North America	247	250	**250**	243
Russian sales	651	664	**620**	675
Others	205	205	**210**	210
Secondary	1 605	1 420	**1 479**	1 578
Recycle – Auto	1 185	1 020	**1 064**	1 143
Recycle – Jewellery	365	345	**355**	375
Recycle – Other	55	55	**60**	60
Total supply	7 224	7 049	**7 128**	7 340
Movement in stocks	369	(811)	**(701)**	(582)

- **Supply** to increase by 1%
- Modest recycling growth to offset weaker Russian supply.

PALLADIUM PRICING

Palladium closed FY2024 some 21% lower, at US$978 per ounce, than its start at US$1 227 per ounce. The average London trade price for the full financial year was 39% lower at US$1 073 per ounce (FY2023: US$1 763). Palladium peaked at US$1 324 per ounce and troughed at US$872 per ounce.

Palladium pricing continues to be negatively impacted by a confluence of factors including the sustained flow of discounted Russian primary supply, destocking by automotive OEMs adjusting their inventory levels and rising open interest and growing net short positioning on NYMEX.

The demand growth outlook for palladium remains supportive on expectations for a medium-term recovery in automotive production, and as the narrative about EV penetration rates slowing at the expense of rising preferences for hybrid vehicles gains traction. Despite news of lower Russian refined production in 2024 and weaker recycling flows, investor positioning remains overwhelmingly bearish, with limited short covering during the period.

DEMAND

koz	2022	2023	2024	2025
Industrial	10 120	10 226	**9 892**	9 984
Automotive	8 439	8 675	**8 356**	8 477
Hydrogen	—	—	**1**	2
Other industrial	1 681	1 551	**1 535**	1 505
Jewellery	225	225	**225**	230
Investment	(90)	90	**36**	—
Total demand	10 255	10 541	**10 153**	10 214

2024 PALLADIUM MARKET to be in deficit

- **Demand** estimated to decrease by 3%
- Automotive impacted by BEV growth, switching and Chinese thrifting
- Industrial offtake reflects ongoing price elasticity of demand
- Positive YtD ETF inflows.

SUPPLY

koz	2022	2023	2024	2025
Primary	6 474	6 474	**6 273**	6 399
South Africa	2 322	2 346	**2 349**	2 349
Zimbabwe	406	423	**433**	432
North America	747	774	**760**	732
Russian sales	2 790	2 692	**2 515**	2 665
Others	210	210	**215**	220
Secondary	3 195	2 780	**2 948**	3 215
Recycle – Auto	2 700	2 310	**2 503**	2 775
Recycle – Jewellery	110	95	**75**	70
Recycle – Other	385	375	**370**	370
Total supply	9 669	9 224	**9 221**	9 613
Movement in stocks	(586)	(1 316)	**(932)**	(600)

- **Supply** to remain flat
- Russian processing maintenance and reduced North American production.

Appendix C – Market analysis continued

DEMAND

koz	2022	2023	2024	2025
Industrial	1 006	1 086	**1 077**	1 099
Automotive	927	971	**918**	936
Other industrial	79	115	**159**	163
Investment	(1)	(1)	**–**	–
Total demand	1 005	1 085	**1 077**	1 099

2024 RHODIUM MARKET remain in deficit
- **Demand** to decrease by 1%
- Weaker automotive demand, with recovery in industrial offtake.

SUPPLY

koz	2022	2023	2024	2025
Primary	708	680	**717**	706
South Africa	589	558	**592**	582
Zimbabwe	43	44	**45**	45
North America	14	14	**14**	14
Russian sales	57	58	**60**	60
Others	5	5	**5**	5
Secondary	330	275	**289**	308
Recycle – Auto	330	275	**289**	308
Total supply	1 038	955	**1 006**	1 015
Movement in stocks	33	(130)	**(71)**	(84)

- **Supply** to increase by 5%
- Increased South African and secondary supply.

Rhodium pricing

Rhodium pricing rebased in the second half of the FY2023 reporting period on soft spot demand from Chinese fabricators due to a slower-than-expected recovery in economic activity, domestic fibreglass manufacturers destocking inventory to manage financial difficulties, and elevated stock levels at auto OEMs. Rhodium pricing then strengthened from a soft opening at the start of FY2024 and stabilised, trading in a narrow range in the latter half of the financial year. Rhodium opened at US$4 000 per ounce, which reflected trough pricing in the period, and a short-lived price squeeze in October resulted in a peak of US$5 500 per ounce. The closing price of US$4 650 per ounce was 16% higher than the opening of US$4 000 per ounce on New York Dealer Trades, while the average price for the full financial year was 16% weaker at US$4 440 per ounce (FY2023: US$11 458).

Rhodium's modest gains over the period reflect improving physical market conditions. The metal is significantly exposed to South African supply and the pace of electrification. Likely revisions to both these metrics will continue to result in tight markets and price support in the medium term.

Automotive

The global light vehicle (LV) market delivered significant volume improvements in 2023 versus 2022, boosted by pent-up demand and fading supply constraints as semiconductor shortages eased. All key regions posted annual gains and it is estimated LV volumes expanded by 10% to 86.5 million units. In 2024, markets previously impeded by a lack of vehicle availability will now reflect underlying demand drivers, with inventory levels approaching normalised levels and consumer requirements dictating sales volumes.

Light-duty vehicle sales

	2022	2023	% change	2024 estimate	Year-on-year
World	78.6	86.5	10%	**89.2**	3%
North America	15.3	17.2	13%	**17.8**	3%
Europe	13.9	16.2	17%	**16.9**	4%
Japan	4.2	4.7	14%	**4.9**	3%
India	4.4	4.7	7%	**4.9**	3%
China	23.9	25.2	6%	**25.7**	2%
Rest of the world	16.9	18.4	9%	**19**	4%

Source: Global Data 2024 April Forecast.

In the US and Western Europe, underlying demand is facing headwinds from the high interest rates impacting financing, elevated vehicle transaction pricing and generally weak macro-economic conditions. Market expectations include some price easing and, with 2023 results still soft relative to underlying capacity, continued growth, albeit at a slower pace. In China, selling rates proved robust. A domestic price war and broader government support for the economy likely drove some pull-forward of sales and a stable market is anticipated in 2024 before growth returns in 2025. India delivered another record year in 2023 and is expected to deliver strong volume gains in the medium term. In total, Global Data expects LV sales growth of 3% in 2024 and 4% in 2025.

LV production increased by 10% in 2023 and is expected to rise by 1% in 2024 and 3% in 2025 as backlogs and inventories normalise, exposing production to cooler underlying LV demand due to the tight economic conditions and affordability issues weighing on consumers. LV sales of 42.4 million units in H1 2024 rose by 3% from the prior comparable period.

In the final months of 2023, the theme about slowing sales growth in battery electric vehicles (BEVs) emerged. This gained momentum in the first half of 2024 – despite a record number of BEVs delivered during the year. Growth in aggregate electrified vehicles is now faster than for BEVs, with various types of hybrid electric vehicles gaining notable sales traction. BEVs suffer from poor affordability in mature markets, including Europe. Inadequate public charging infrastructure deters buyers who cannot charge

Appendix C – Market analysis continued

their vehicles overnight in a private driveway or garage, and those who want to undertake long journeys without worrying about how to recharge their vehicles. In many European markets and the US, the BEV early-adopter phase is waning, and future growth will be determined by practical considerations, most notable affordability and convenience.

Current forecasts assume BEVs will realise further market share gains at the expense of internal combustion engine vehicles in 2024 and beyond. However, near-term market outlooks are now being trimmed in both North America and Europe where mass-market adoption of BEVs faces challenges from a combination of lower or withdrawn government subsidies, high pricing, falling resale values and a lack of charging infrastructure.

Global medium and heavy truck sales are expected to slow in 2024 after a strong performance in 2023 and a weaker outlook in mature markets, including Europe and North America. Global Data expects growth of 3% in 2024 and 5% in 2025 after the 16% volume gain delivered in 2023. Production, which increased by 13% in 2023, is expected to grow 2% in 2024 before accelerating marginally to 5% in 2025.

Having surprised positively in 2023, PGM automotive demand is set to ease in 2024, with limited forecast LV production growth still skewed to BEVs, and on continued efforts to thrift loadings between emission stages in both the LV and heavy-duty markets. Platinum demand will outperform both palladium and rhodium, supported by higher switching and growth in the heavy-duty market.

Industrial

Industrial demand for PGMs is driven by the chemical, glass, electrical, biomedical and petroleum sectors and is impacted by capacity utilisation rates and changes in installed capacity. China's goal of self-sufficiency has driven structural growth in industrial PGMs in the recent past, with heavy investment into expanding domestic capacity in chemical, glass and petroleum refining.

Platinum industrial demand was stable in 2023, benefiting from resilient glass and chemical demand, which offset softer offtake elsewhere. Industrial demand for palladium continues to exhibit greater price elasticity than for platinum or rhodium, with easing chemical offtake during the year compounded by weaker electronics demand. Rhodium industrial demand was negatively impacted by weak glass demand in 2022 and 2023, as alloys were adjusted to contain higher platinum content in response to record rhodium pricing.

Despite the still-uncertain global macro-economic environment, industrial demand for PGMs is expected to ease but remain elevated in 2024, supported by robust chemical demand and a modest recovery in electronics demand from both electronic devices and renewed investment in data storage following the post-Covid-19 slowdown. These underlying growth drivers will help compensate for a slowing cycle of capacity expansions in key demand sectors including chemicals, glass and petrochemicals, which supported industrial PGM demand at record levels over the recent past.

Jewellery

Platinum jewellery demand decreased in 2023 as the Chinese jewellery market contracted due to soft consumer sentiment on a slowing domestic economy, competition from gold, and a run-down in retail and manufacturer stocks, which offset better-than-expected demand in other regions. In Europe, lower bridal and mass-market demand was offset by continued gains in top-end jewellery and watch brands, while in North America, wedding numbers normalised after the post-Covid-19 catch-up.

The decline in western markets was more modest than initially feared, however, with both Europe and North America maintaining elevated levels of demand relative to those achieved pre-Covid-19 – promotional support and platinum's sustained price discount to gold resulted in structural market growth in these key regions.

Japan and India saw rising demand from the continued recovery after Covid-19 restrictions. India delivered strong gains, bolstered by store expansions and the promotion of branded collections, including men's jewellery, which benefits offtake due to the heavier weight of the pieces. The recovery in Japanese exports boosted manufacturing volumes, offsetting lacklustre bridal demand.

The post-Covid-19 recovery in jewellery demand is now largely complete and after a notable contraction in the recent past, a modest improvement in Chinese demand is expected in 2024, albeit off a base of circa 50% of pre-pandemic levels. Western demand is likely to edge higher – platinum's sustained price discount to gold, expectations for a 'soft landing' in the US and modest restocking will support offtake in North America. European demand will benefit from a resilient luxury sector and further growth in the bridal market, away from white gold. India is set to deliver double-digit growth in the medium term, with manufacturing volumes benefiting from store expansions into tier two and tier three cities and strong exports. Japanese demand will also benefit from the pricing differential to gold supporting bridal offtake.

The platinum jewellery sector has now rebalanced – from a Chinese-dominated demand segment to a more regionally diverse and less price elastic one. While base offtake was established at well-below peak levels due to lower Chinese fabrication, demand is now more closely linked to underlying consumer and demographic trends – with core bridal demand bolstered in key regions by promotional campaigns, support for branded collections, the continued development of men's jewellery in key markets, rising exports from key fabricating countries and the wide price discount to gold, which has led to upward revisions to demand expectations from Europe and North America. Our own modelling indicates this provides resilient and meaningful stability to the demand outlook for platinum jewellery.

Investment

A distinct lack of investor conviction in the outlook for PGMs characterised 2023. The unfavourable economic backdrop to commodities in general was compounded by the outlook for global interest rates, which have remained higher for longer. Elevated interest rates increased yields, strengthened the US dollar and detracted from the investment case for precious metal investment. In China, despite fiscal and monetary stimulus, the real estate sector remained troubled and industrial commodities suffered bouts of heavy sell offs, which weighed further on PGMs.

Appendix C – Market analysis continued

Implats' definition of the investment market includes ETF flows and net bar and coin purchases. In 2023, modest purchasing by platinum ETFs and positive Japanese bar buying offset weakness in bar and coin purchases elsewhere, resulting in total net platinum investment of circa 177 000 ounces. Palladium and rhodium investment markets are far more modest in size and the Group estimates net ETF purchases of 58 000 ounces of palladium and negligible sales of less than 1 000 ounces of rhodium in 2023.

Strong medium to longer-term fundamentals and gold price gains provided a floor to both platinum pricing and investment in the first half 2024, with year-to-date ETF purchases at multi-year highs. Palladium investment benefited from price declines and the improving auto narrative about potentially slower BEV adoption rates. Despite significant net short speculative positioning, ETF inflows have been positive in 2024.

As of 30 June 2024, the 13 platinum, palladium and rhodium exchange traded funds in Europe, Asia, North America, Australia, Japan and South Africa held a total of 3.39 million ounces platinum and 656 500 ounces palladium, with 2024 calendar year-to-date inflows of 444 1000 ounces and 142 000 ounces, respectively. Rhodium ETF activity was negligible, with holdings of 9 300 ounces some 100 ounces lower in 2024.

After neutral Japanese bar activity in Q1 2024, the rising yen platinum price resulted in net bar returns by Japanese investors in Q2 2024, resulting in modest net disinvestment in the year-to-date. Elsewhere, bar and coin demand in the West will be challenged by lower Eagle coin production by the US Mint, and Chinese demand is set to benefit from the increased availability and promotion of investment products. Metals Focus expects annual bar and coin demand to retrace by 38% to circa 200 000 ounces in 2024 from 323 000 ounces recorded in 2023 as these forces play out.

Supplies

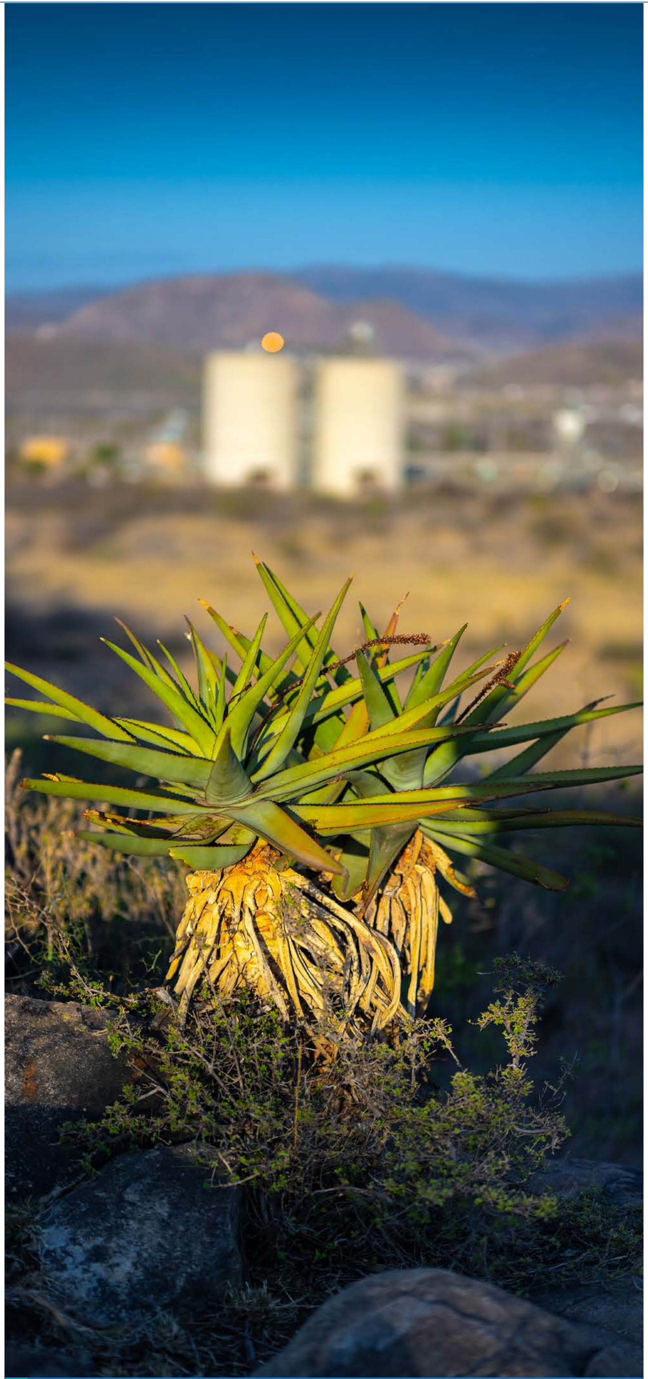
Refined PGM mine supply disappointed in 2023, due to operational constraints across most key producing geographies, limited destocking of excess in-process inventory and a series of negative revisions announced to medium-term production profiles across the PGM peer group. Russian production, however, was delivered in excess of previous guidance, with sales volumes further elevated by destocking of refined inventory. Scheduled furnace maintenance at Nornickel in 2023 was delayed and 2024 production was guided to retrace as a result, with constrained processing capacity unlikely to allow for in-process inventory to accumulate at Nornickel.

The significant retracement in PGM pricing over 2023 placed considerable pressure on South African and North American producer economics. Capital expenditure, which was set to peak across the industry in 2023 and 2024, was scaled back significantly, with several mine closures and project deferrals announced.

Implats retains its assertion that previously planned capex was primarily aimed at improving asset integrity and environmental performance, and that the limited project profile served as replacement rather than growth off the existing asset base. Current PGM pricing will induce further supply rationalisation, with primary supply now set to decline in the medium term. Broader strategic repositioning was also announced across the peer group of southern African and North American primary producers, which has the potential to shift future production profiles across the sector.

Secondary PGM supply contracted again in 2023 as auto sales remained weak and scrappage rates reduced. In addition, the cost and complexity of collecting, funding, and transporting spent catalyst material remains high. Some recovery in secondary supply is expected in the short term, with meaningful medium-term growth possible from the rising pool of metal accumulating from the Chinese light-duty fleet.

Market commentators have significantly shifted their views of the likely pace of structural growth in secondary supply. Medium-term recovery rates are expected to ease as a myriad of impediments to improved secondary flows play out. These downward revisions to secondary forecasts are meaningful in tightening future expected market balances in each of the major PGMs.



Marula in the distance