Platinum Demand to Grow from 2025 Onwards
Tue Jan 07 2025

Key Points

- Global platinum demand declined ~18% in the past decade
- Consumption nadir will be reached during 2025
- Decline in diesel vehicle sales have plateaued
- Industrial/chemical demand to exceed autocatalyst by 2035
- Platinum prices to remain flat for foreseeable future

Anyone who suggests that forecasting commodity prices is easy, has never attempted it, or has a very selective memory. In July 2020, we forecasted that the price of palladium would do substantially better than platinum, with Russian producers using the opportunity to replenish stockpiles (depleted by a decade of primary and secondary deficits). Our key conclusion was that large volumes in excess of demand would continually inundate the market, depressing the platinum price, hence our recommendation to go Short. Yet by January 2021, we were forced to close a number of our PGM Shorts, a trade that had gone strongly against us, incorrectly predicting the severity of global vehicle sales (down only -16.5% vs a predicted -50%).

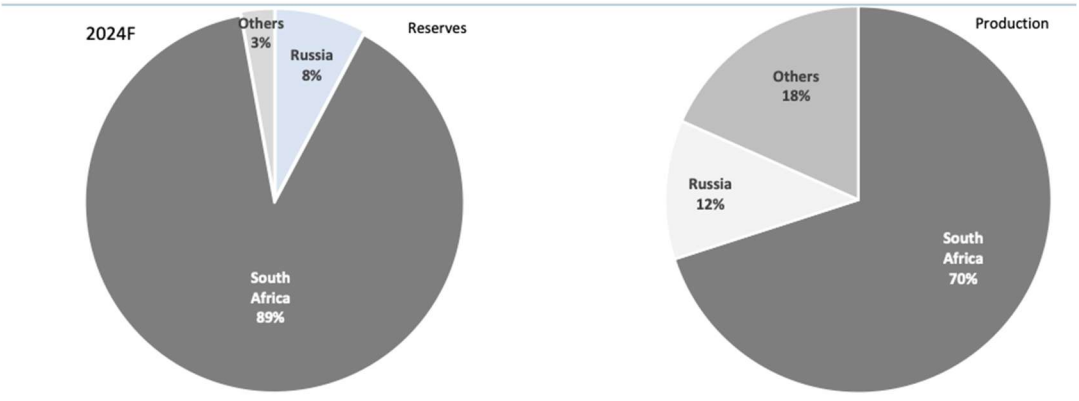
Having not updated our PGM outlook since, this revision will encompass a period of rapid technological change, in particular, the adoption of EVs and hybrids, which have fundamentally changed demand profile for platinum.

We will update palladium in the near future.

Supply

Almost all known PGE production and resources are associated with three geologic occurrences: (i) Bushveld Complex, a layered mafic-to-ultramafic intrusion in South Africa; (ii) Great Dyke, a similar but less endowed intrusion in Zimbabwe; and (iii) sill-like intrusions associated with flood basalts in the Norilsk region, Russia. Primary platinum supply is dominated by South African production (~89%), whilst Russia is the dominant supplier for palladium.

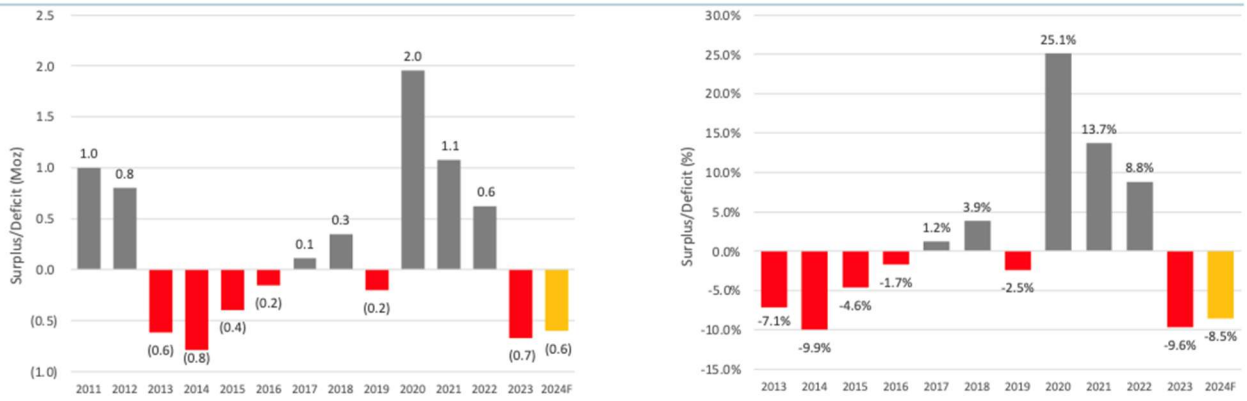
Figures 1 & 2: Global PGM reserves (left); and largest global primary PGM producers are predominately South African based miners, followed by Nornickel's Russian nickel operations (right).



Source: USGS (2024), Johnson Matthey (2024), Janus Analysis

Unlike many other commodities (with the exception of gold), secondary supply of PGE's is a critical and increasing source, accounting for approximately 17-18% of platinum supplies; obtained primarily via the recycling of jewellery, electrical equipment, and catalytic converters. Recycling volumes are highly sensitive to PGE prices, higher the prices, the greater volume. Current platinum deficits have not yet consumed surpluses that accumulated during the covid period (see Figures 3 & 4).

Figures 3 & 4: Global platinum market balance (left); and apparent platinum deficit/surplus in percentage terms (right).

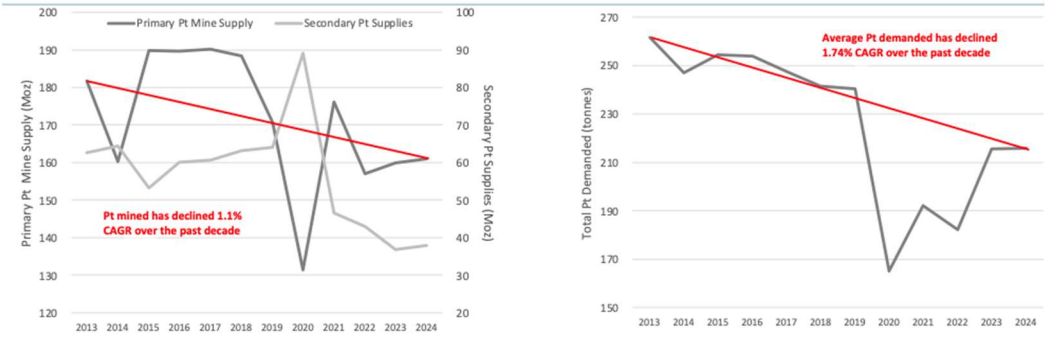


Source: Johnson Matthey (2024), Janus Analysis

Demand

Arguably, the reason why this sector is receiving so little analytical attention is that global demand matured a little more than a decade ago, and has subsequently declined 17-18% (see Figure 5). The majority of platinum's chemical applications are in the form of catalysts that are utilised, but importantly, not consumed, hence, most of the purchasing occurs at the time of plant construction, with minor amounts of 'top-up' metal required thereafter to account for wear and tear.

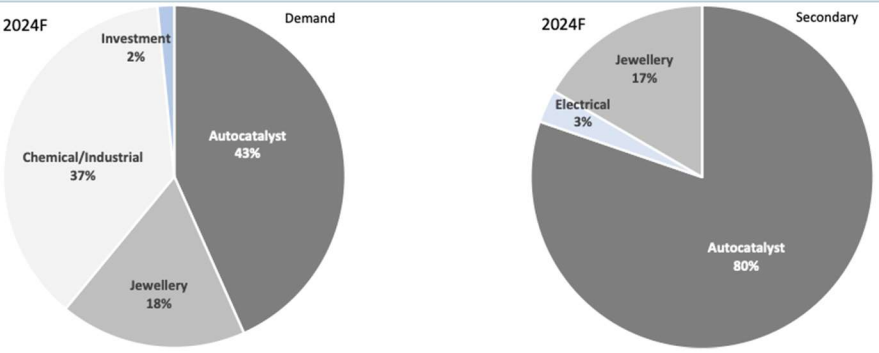
Figures 5 & 6: Although impacted by covid, global platinum demand has declined 17.6% over the past decade (left); interestingly, primary platinum supply has only declined 11.4%, underlying the structural robustness and cost efficiency of S.A. mining (right).



Source: Johnson Matthey (2024), Janus Analysis

Approximately 43-44% of platinum is consumed by the auto industry, primarily in the form of vehicle emissions control devices via catalytic converters (see Figure 7). Platinum is an excellent catalyst in the ignition of hydrogen with substantial resistance to sulphur, phosphorus and lead. Its drawback (compared with palladium) is it's relatively low activity for the conversion of NOx and sensitivity to the high temperatures that occur under high engine loads. The key reason why platinum has been favoured in diesel applications is because the exhaust stream is highly oxidising, which would convert palladium into a less catalytically-active oxide (by comparison, platinum retains its primary metallic form).

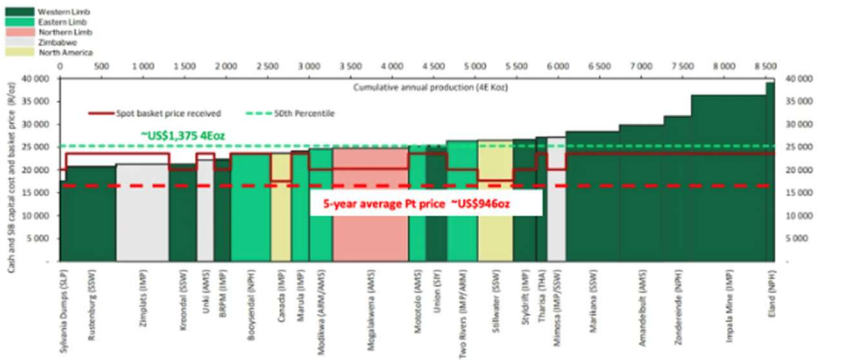
Figures 7 & 8: Primary Platinum demand (left); and secondary Platinum sources, dominated by used autocatalyst recycling (right).



Source: USGS (2024), Johnson Matthey (2024), Janus Analysis

Jewellery accounts for between 17-18% of annual demand. Since 1975, platinum jewellery has been estimated to have contributed ~79-80Moz of demand; however, more recently, consumption has more than halved, dropping from 2.9Moz in 2021 to ~1.3Moz in 2024F (the lowest level since the 1980's). Particularly evident in China and Japan, where preferences have migrated away from platinum toward gold. Even worse, investment into platinum bullion has collapsed, to being only 4% in 2023 on levels five years earlier.

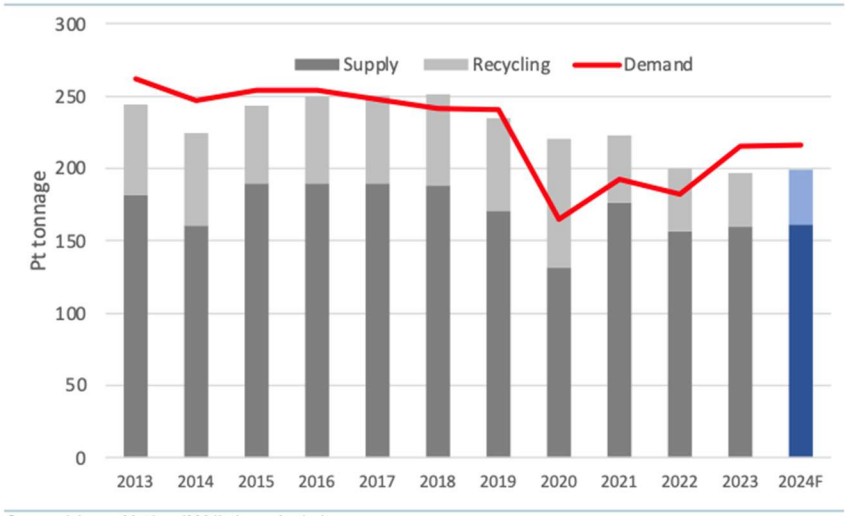
Figure 9: South African PGM industry cost curve (cash cost including capex). Declining primary supply due to cost pressure and capital constraints.



Source: Sibanye Stillwater (2024), Janus Analysis

The second largest and arguably now the most important segment of platinum demand are chemical and industrial uses (growing, at 3-4% pa). In oil refining, it is used in reforming and isomerisation, allowing the creation of higher-octane fuels. Platinum's largest industrial chemical use is actually in the production of nitric acid in the oxidation of ammonia, required in the production of nitrogen fertilisers. It is also included within the storage layer of hard disk drives, and the fabrication of LCD glass. Lesser-known applications include medical machinery electrodes such as oxygen sensors in turbine engines. In some chemical forms, platinum can inhibit the production of living cells, which has led to platinum-based antineoplastic drugs used to treat almost half of individuals receiving chemotherapy.

Figure 10: The drop in primary supply over the past five years is primarily from South African operations.

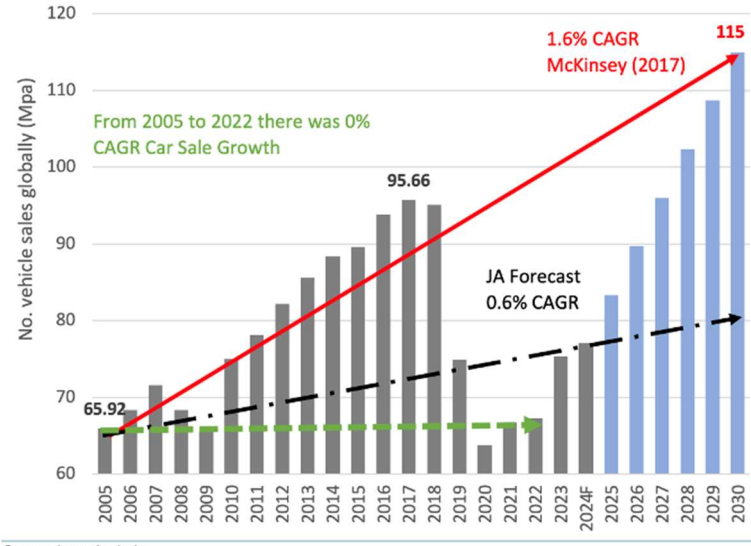


Source: Johnson Matthey (2024), Janus Analysis

Global Vehicle Sales & EV/Hybrid Transition Assumptions

The key input into any demand model for platinum includes global vehicle sales. Our forecast sales for the remainder of the decade are >30% less than previous consensus numbers. They form the numerical basis from which we estimate each type of vehicular propulsion; then back-calculate future platinum and palladium demand tonnages.

Figure 11: Actual and projected global car sales.



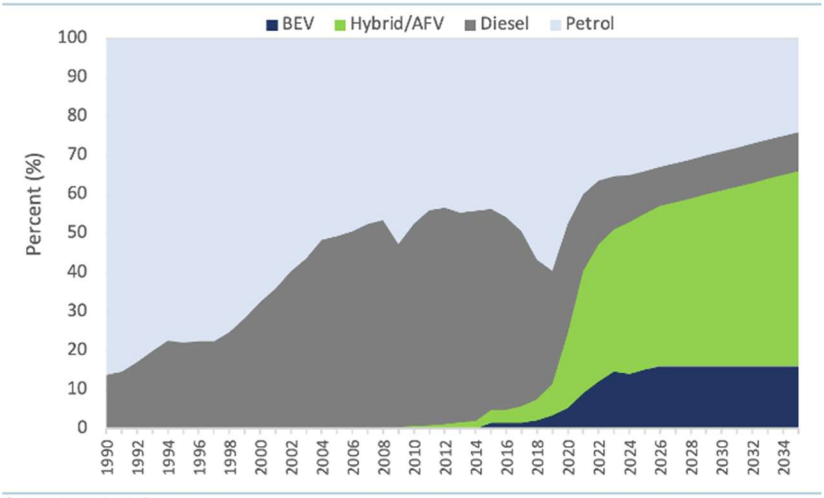
Source: Janus Analysis

Historically, we have used EU vehicle sales as a template of EV/Hybrid adoption globally. Officially, the bureaucrats continue to insist that a sales ban on all internal combustion engine (ICE) vehicles will be implemented by 2035, as a key plank towards its 2050 objective of being climate neutral. A large part of

that plan is to also ban hybrids by 2040, but allow PHEVs (plug-in hybrids). In reality, political pragmatism is slowly arriving, and current EV targets will, in time, become aspirational.

In that respect, the transition from diesel to alternatives started in 2016, before the arrival of the EVs, when it became clear to the consumer that there were increased health risks associated with carcinogens and particulate matter – without, we should add, any EU or national government mandate. Palladium historically traded at half the price of platinum and a decade ago, it was trading at a 400% premium. The continual decline in diesel (see Figure 12) power-plants (grey) and the extra-ordinary rise in hybrids (green), confirmed what we have continually published over the past four years, that this transition would not be dominated by BEV's (navy blue), despite the market hype and generous government handouts. Remarkable turnaround, given that a decade ago, diesel cars were a dominant powerplant in Europe.

Figure 12: EU car registration by fuel type. Using a sigmoidal growth curve as our guide, in our projection out to 2030, we have assumed that EU trends are a guide to global adoption rates and trends.



Source: Janus Analysis

We add a key point, typically ignored by the financial commentariat, that this transition away from diesel toward hybrids was driven by consumer choice, not government mandates. Which reinforces to our investment narrative, that if a technology offers more efficient production of superior goods and/or services then adoption is rapid. Massive government subsidies for BEVs, by contrast, merely distorts consumer preferences (temporarily) and will out-weigh any perceived environmental benefit via the inefficient and wasteful allocation of economic resources.

Platinum Forecast

The demand profile associated with platinum consumption (compared with other major commodities) is reliable/stable, which means that our forecasts should be relatively robust. The future pricing is another matter entirely, introducing additional variables, which are largely outside the scope of this endeavour.

Key Assumptions

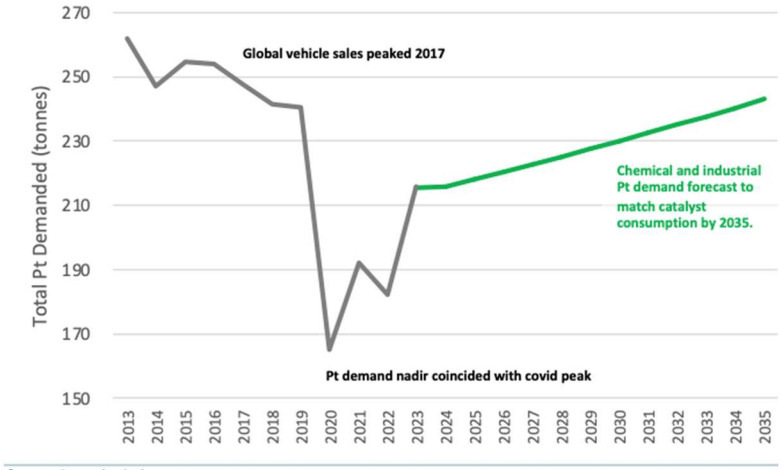
- EU diesel demand now at levels last seen in 1998. Our model suggests that numerically, diesel vehicles will stabilise at current levels (growth rate ~0.7% pa), with any future declines in percentage terms being offset by greater numbers of vehicles sold;

- Diesel vehicles have operational benefits of torque, range and longevity that can never be replicated via BEV adoption (constrained by chemistry, not technological innovation);
- Trump intends to pull the US out of the Paris Agreement, NetZero is now only official policy in Europe, Japan, Canada and Australia;
- Rise of Chinese hegemony in minerals processing has meant that potential long-term supplies of various materials and componentry may not be as secure as it has been historically. The political implication being, it is not in a nations interest to be economically dependent on supply chains that have the high likelihood of being withheld; and
- Industrial and chemical growth in platinum demand over the past decade has increased ~21%. We assume a flat 2% increase CAGR out to 2035.

Conclusions

- Despite declining 18% over the past decade, platinum demand is forecast to reach its nadir during 2025, after which, consumption will begin to grow steadily (see Figure 11);
- The growth in industrial and chemical demand will match that of autocatalysts by mid 2035, then exceed it from that point onwards; and
- Platinum prices are likely to persist at current levels, in real-terms, into the foreseeable future.

Figure 11: Actual and forecast platinum demand (in green) out to 2035.



Source: Janus Analysis

Source: https://www.linkedin.com/