

## Latest Russia sanctions unlikely to impact near-term PGM markets, but there may be longer term benefits

Russia's ore bodies contain both base metals and byproduct platinum group metals (PGM). Russia accounted for 28% of primary 2E PGM supply in 2023. We see a limited impact from the latest round of base metal sanctions; like after the April 2022 sanctions by the London Platinum and Palladium Market, metal will continue flowing. However, in combination with other factors the sanctions probably eliminate previously anticipated supply growth from Russia, which given its importance to class 1 nickel markets may present another headwind to BEV growth rates and support higher for longer ICE PGM demand.

The US and UK have sanctioned Russian base metals exports, from 13 April 2024, delivered via the London Metals and Chicago Mercantile Exchanges. Although LME futures prices for aluminium and nickel initially responded strongly (Fig. 3) to sanctions, prices have subsequently pared gains. Banning metal delivered via exchange is unlikely to impact base metal fundamentals because most traded metal is not delivered to LME warehouses nor expected to be classed as LME deliverable. Moreover, prior to this ban the West had already begun self-sanctioning and reducing use of Russia's class 1 nickel. This has resulted in higher metal flows to sanction agnostic regions such as China and India. While Nor Nickel noted that "it will remain a reliable supplier" despite sanctions, rising trade barriers and significant Indonesian nickel supply growth (which is also selling into China and India) likely suggests that Russian base metal production (and consequently PGM output) will not grow as was targeted prior to 2022.

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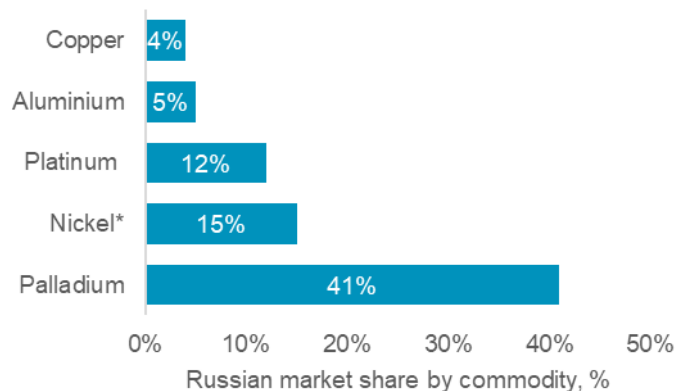
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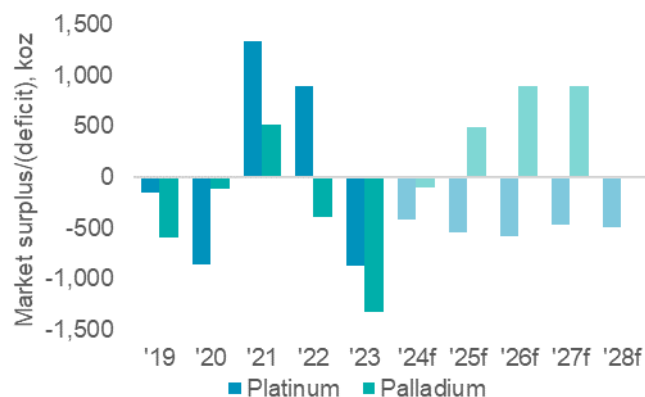
18 April 2024

Figure 1: Russia is a major source of important metals



Source: Bloomberg, WPIC Research, \*Class 1 refined Nickel

Figure 2: Palladium market deficits may extend longer



Source: Metals Focus (2019 to 2023 for Pd, and 2019 to 2024 for Pt), WPIC research

Notably, PGM supply risks already appear skewed to the downside, 1) low levels of profitability may lead to restructuring of several mines (Fig. 8), 2) recycled PGM supply has been depressed for two-years with growing uncertainty about ~1 Moz of incremental secondary supply growth by 2028f.

Considering the impacts of diversifying away from Russian nickel, the critical mineral supply chain for BEVs would deteriorate as OEMs are also aiming to avoid emission intensive Indonesian nickel. While BEVs will continue gaining market share, trade frictions may slow already moderating BEV market share gains (Fig. 5). Slower BEV growth could extend palladium market deficits (Fig. 2) ahead of reverse substitution from 2026f (Fig. 6). Ultimately, the combination of some heightened supply uncertainty and prospective automotive demand longevity should serve to bolster weak PGM sentiment most notably for palladium where prices declined by -39% in 2023 (-8% YTD) despite an estimated market deficit of 1.3 Moz (13% of demand). WPIC highlights that supply demand fundamentals are strong for platinum and improving in the short term for palladium and that markets are ignoring the challenges facing the drivetrain transition particularly within a heightened geopolitical risk environment.

**Russian PGM production is a co-product of the country's base metal mining which is facing increased sanctions.**

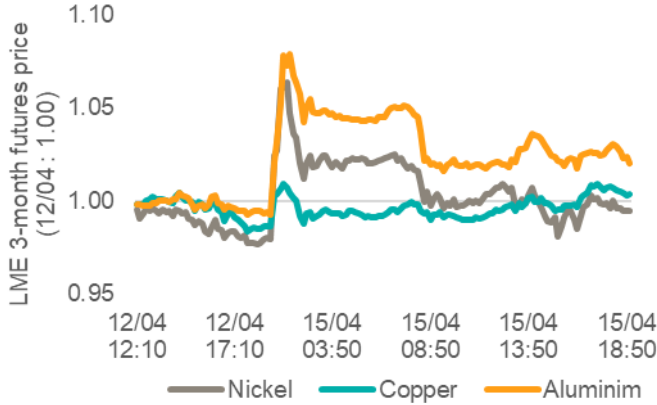
**Sanctions to metal deliverable via exchange is unlikely to impact market fundamentals...**

**...but Russia supply growth is likely eliminated, which in combination with self-sanctioning could act to delay the BEV transition.**

**Platinum's attraction as an investment asset arises from:**

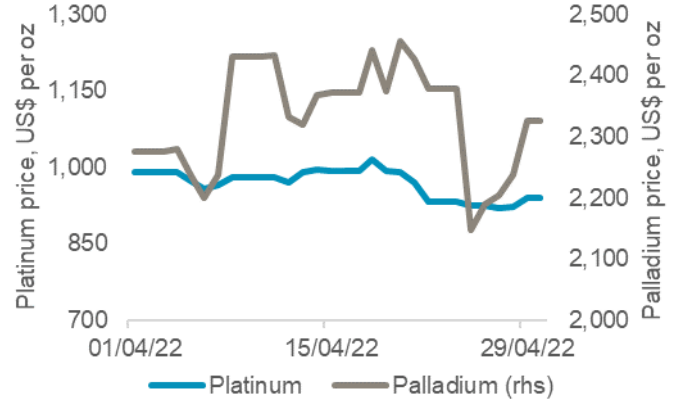
- WPIC research indicates the platinum market entering a period of consecutive deficits from 2023.
- Platinum supply remains challenged, hampered by production challenges in South Africa and with recycling supplies.
- Automotive platinum demand growth should continue due principally to substitution in gasoline vehicles.
- Growing off a small base, hydrogen will be a major source of platinum demand in the future.
- The platinum price remains historically undervalued and significantly below both gold and palladium.

**Figure 3: LME futures prices pared gains after an initial sharp response to US and UK sanctions on Russian base metals**



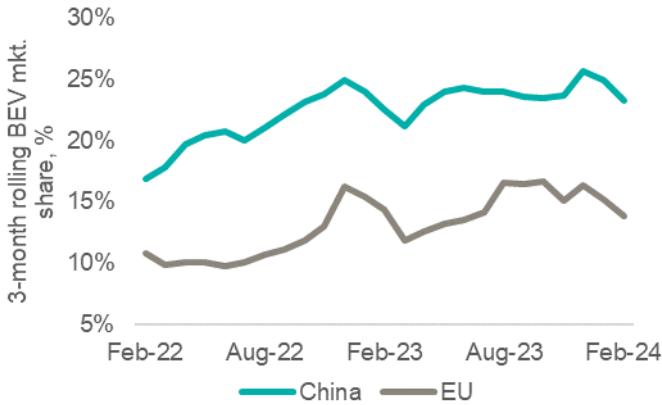
Source: Bloomberg, WPIC Research

**Figure 4: Similarly, LPPM sanctions on Russian PGMs did not result in sustained PGM price increases beyond the initial 8 April 2022 shock**



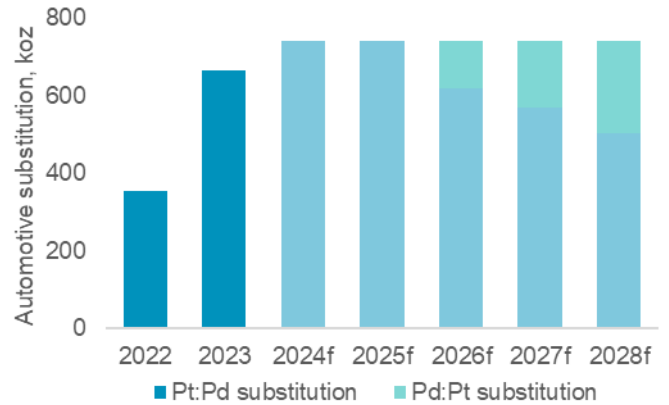
Source: Bloomberg, WPIC Research

**Figure 5: The rate of light-duty BEV market share gains is slowing suggesting PGM containing ICE and hybrid vehicle demand will have a long-tail into the 2030s**



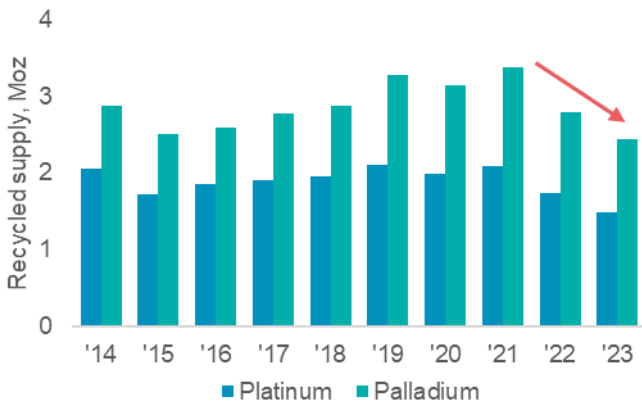
Source: CAAM, ACEA, WPIC research

**Figure 6: Palladium for platinum automotive substitution is likely to drive net incremental palladium demand growth from 2026f**



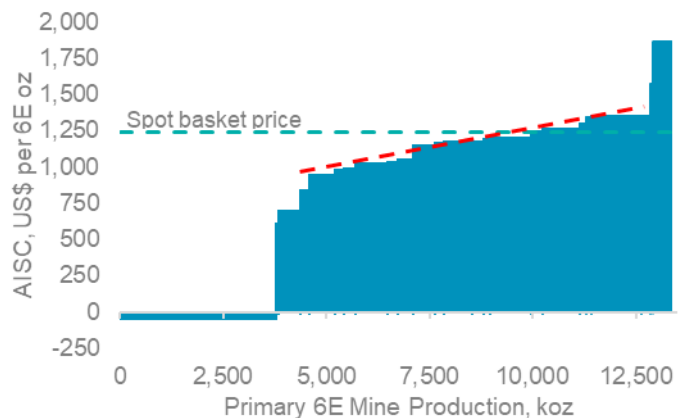
Source: Metals Focus (to 2024f), WPIC research from 2025f

**Figure 7: Recycled PGM supply has declined over the past two-years due to changing consumer habits, regulatory clampdowns, and profitability headwinds**



Source: SFA (Oxford) 2014-2018 for Pt, Metals Focus 2019 to 2023 for Pt and all Pd, WPIC

**Figure 8: The PGM all-in-sustaining-cost curve suggests a large minority of primary supply is loss making at spot basket prices**



Source: Company data, Bloomberg, WPIC research

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