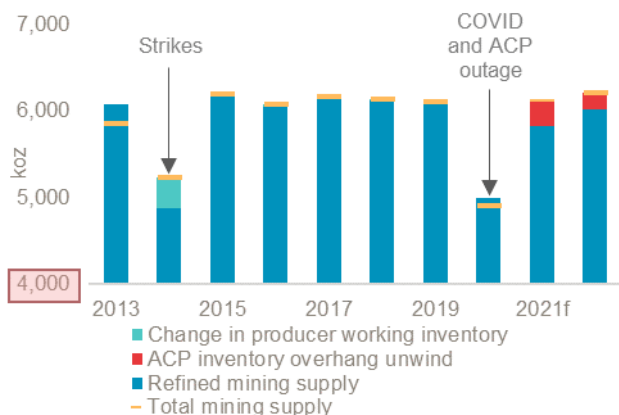


Platinum mining supply will rise back to pre-COVID levels only in 2024 despite high PGM basket prices

A significant spike in refined platinum supply in 2021 has given the superficial appearance of growth in mine output in response to higher PGM basket prices. However, most of the increase is a recovery in output post COVID disruptions in 2020, significantly supplemented by the unwinding of the ACP inventory backlog. With the last of the ACP material coming to market in the first half of 2022, annual refined mine supply is not expected to recover to pre-COVID levels until 2024.

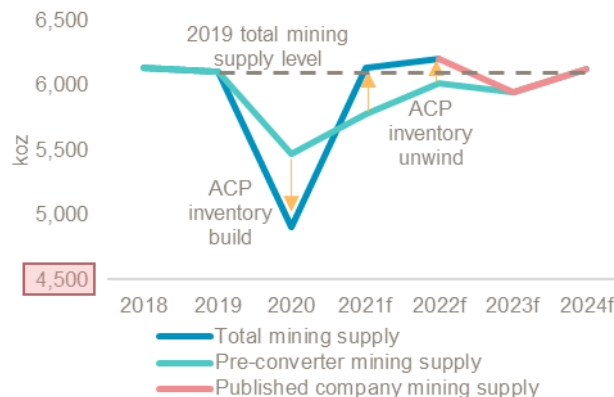
Platinum mining supply was heavily reduced in 2020 by the combined effects of the initial global spread of COVID-19 and the associated lockdowns (-650 koz platinum), as well as the outages of Anglo American Platinum's ACP converter in South Africa (-550 koz). In combination, this reduced 2020 platinum mining supply by 20% from 2019 (almost 1.2 Moz), which, together with record investment demand played a significant part in the ensuing 904 koz 2020 annual deficit. The ACP plant was restarted by the end of 2020, and has since exceeded expected processing rates, running down the semi-finished inventory accumulated during the outages and boosting refined platinum production and total mining supply in 2021 and 2022. Forecast platinum mining supply is projected to return to pre-COVID levels in 2021, and to edge higher in 2022; however, these estimates include at least 360 koz platinum from the ACP inventory unwind in 2021 and 190 koz in H1/2022 with underlying platinum mining supply remaining below pre-COVID levels until 2024.

Unlike 2014, producers were not able to compensate for ACP outages by drawing on refined inventories in 2020



Source: Metals Focus 2019 and after, SFA (Oxford) pre-2019, WPIC Research

The ACP unwind masks platinum mining supply remaining below pre-COVID levels until 2024



Source: Metals Focus, WPIC Research, Aggregated published company production estimates to the market from 2023

Looking at published company future production estimates, a step-down in production at Anglo American Platinum is expected to be offset by higher output from the other producers. Anglo American Platinum expects its refined platinum mining supply to reduce by over 450 koz in 2023 due to the end of the ACP semi-finished inventory unwind, the end of mine life for some operations and short-term processing constraints during a smelter rebuild. Impala Platinum experienced limited COVID-related disruptions and expects a flat to slightly higher output through 2024. Sibanye-Stillwater expects production growth to taper off in South Africa after several years of consistently strong operating performances, whilst production is expected to grow in the US with the ramp-up of Stillwater East. Nor Nickel expects production to continue to recover from the operational challenges experienced at the beginning of 2021, but the mid-point of company production expectations remains below pre-COVID levels until after 2025.

Despite strong basket prices providing PGM mining companies with welcomed cash generation, platinum mining supply is expected to reach pre-COVID levels only in 2024, after adjusting for the effects of the ACP inventory unwind.

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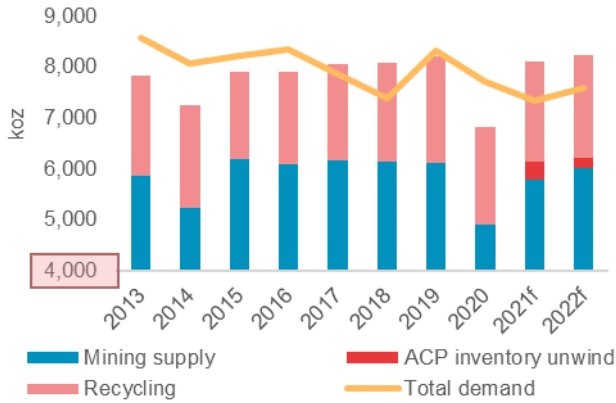
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January 2022

Platinum's attraction as an investment asset arises from:

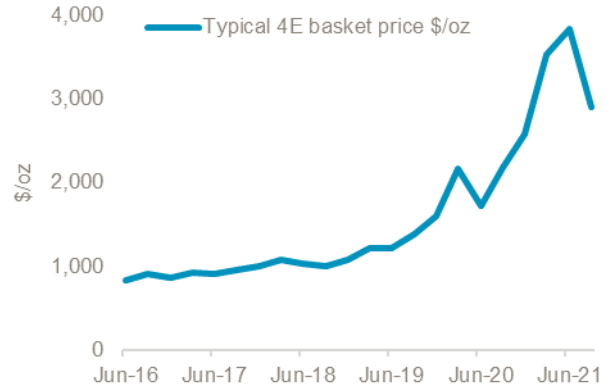
- Supply severely constrained for three more years despite some new investment in mining capacity
- Platinum price remains historically undervalued and significantly below both gold and palladium
- Automotive PGM demand growth should continue due to increasingly restrictive emissions rules
- Market balance and price mismatches between palladium and platinum drive substitution
- Investment demand is softer after two record years, but price and fundamentals remain attractive

Figure 1: The rebound spike in production in 2021 contributes to significant platinum oversupply



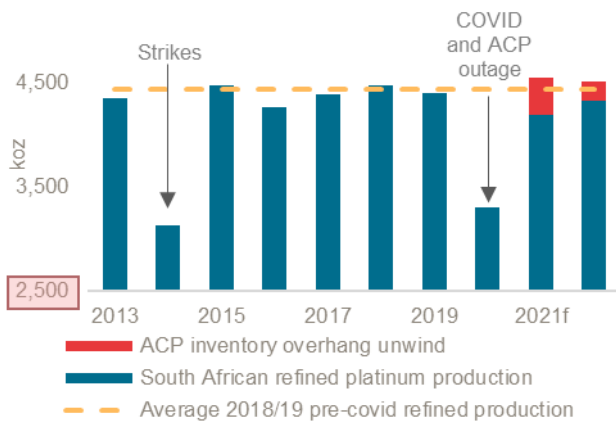
Source: Metals Focus 2019 and after, SFA (Oxford) pre-2019, WPIC Research

Figure 2: This may be incorrectly viewed as producers responding to a dramatic increase in basket prices



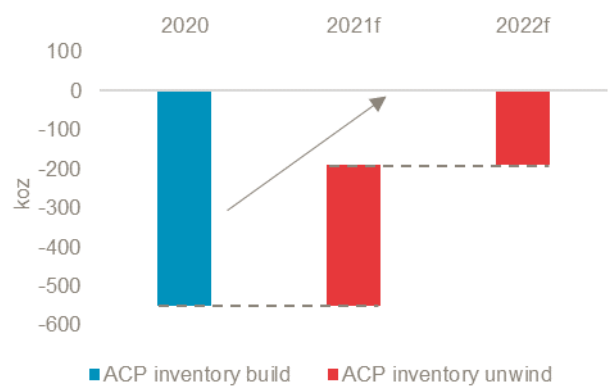
Source: Sibanye-Stillwater

Figure 3: However, platinum mining supply is not that price elastic, with the growth being a recovery from COVID related disruptions...



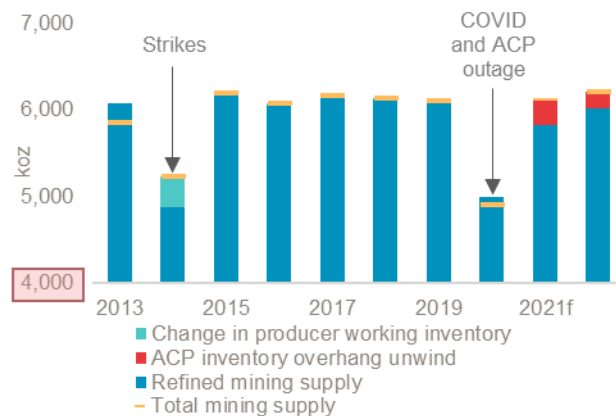
Source: Metals Focus 2019 and after, SFA (Oxford) pre-2019, WPIC Research

Figure 4: ...heavily supplemented by an unwinding of semi-finished ACP inventory accumulated during the 2020 outages



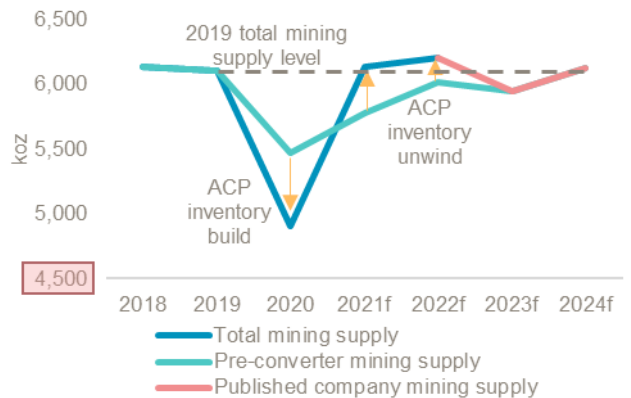
Source: Metals Focus, WPIC Research

Figure 5: Unlike in 2014, producers lacked available refined platinum inventory to compensate for production challenges in 2020



Source: Metals Focus 2019 and after, SFA (Oxford) pre-2019, WPIC Research

Figure 6: Public company production estimates suggests that underlying mine production will not return to pre-COVID levels until 2024



Source: Metals Focus, WPIC Research, Aggregated published company production estimates to the market from 2023

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