



Growing low cost PGM miners

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South Africa produces more platinum group metals (comprising platinum, palladium, rhodium and other minor metals) each year than any other nation. However, the country's output peaked in 2006, at 8.7 million ounces and has fallen to 7.4 million ounces for 2016. This fall is the result of closures of capacity and low replacement capital expenditure by miners in response to a hostile environment.

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Adversities have included rising costs (especially labour and electricity) labour disruptions, low metal prices and regulatory uncertainty. Two miners, Royal Bafokeng Platinum and Northam Platinum, unlike competitors, have chosen to invest in increasing their production during this period - each respectively investing in high quality growth projects.

The mine supply conundrum

Since its 2006 production peak, South Africa's platinum group metals (PGM) sector has experienced an array of stressors on production, beginning with significant electricity shortages between 2008 and 2012. This was followed by widespread labour disruptions which culminated in the unprecedented five-month strike across many SA PGM mines in 2014. Shortly after that, the collapse in the commodity prices made losses difficult to recoup. Further exacerbating factors include the introduction of safety stoppages imposed by the regulator, as well as the uncertain regulatory environment related to mine ownership.

As a result, producers have chosen not to re-invest in future production and the low PGM price environment has necessitated balance sheet preservation and austerity measures. Over this period, capital investments to increase production in local PGM mines has been cut by 40%. This has resulted in a global

flattening in PGM mine supply, with PGM recycling providing the only source of slight growth, as shown in the chart below.

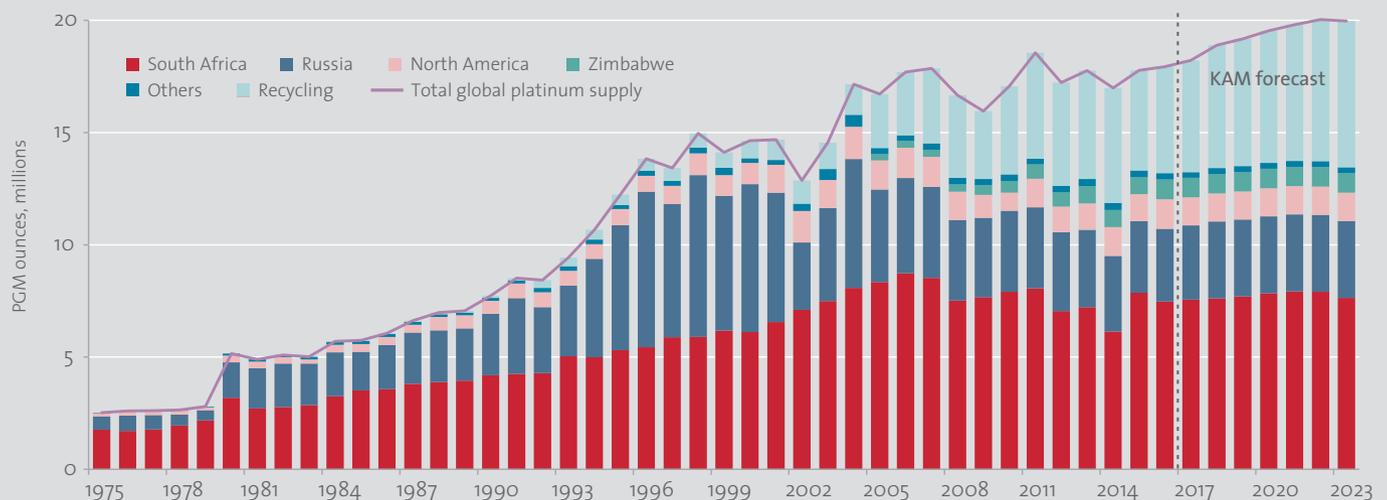
South African PGM supply currently makes up 42% of global supply. The abovementioned two projects combined will produce an additional 530 000 ounces of PGM annually, but this will not be enough to increase the overall output of the South African PGM sector as older mines are mined out. With such a weak supply outlook, we forecast that global demand for PGMs will outstrip supply and result in materially higher metal prices than current spot prices.

Bucking the trend

Royal Bafokeng Platinum (RBP) and Northam Platinum (Northam) have not been affected by much labour disruptions in the sector and have come into the low price environment with stronger balance sheets than competitors. This is enabling both to invest in expansion projects which will support increased, low-cost production.

Northam is investing in its Booyendal Mine expansion, which will increase the company's PGM output from 444 000 ounces annually, to 800 000 ounces by 2022. RBP is investing in the Styldrift 1 project, which will increase its output from 300 000 PGM ounces currently to more than 470 000 PGM ounces in 2021. The chart below is a representation of the

Global PGM* supply is flattening



*Platinum, rhodium and palladium
Sources: Johnson Matthey, Kagiso Asset Management research

projected average production costs and capacity for PGM mining companies globally by 2022, when these expansion projects will both be at full capacity. It shows that RBP and Northam will be highly profitable relative to their competitors, due to their low-cost operations.

A key attribute of both the Booyesendal and Styldrift 1 mines is their scope for mechanisation, due to their ore bodies being wide enough for machinery to access (more than two metres wide). Both new mines are being built for mechanisation which will result in better safety rates as people are removed from harm's way and will reduce the labour complement required. This will mean higher productivity rates and reduced costs compared to a conventional mine with a similar output.

A closer look at Booyesendal

The Booyesendal Mine is located near the town of Mashishing in Limpopo. The mine first came into production in 2013 and has now ramped up its production to 163 000 PGM ounces a year. We estimate that, by the end of the decade, Booyesendal will be producing more than 400 000 ounces of PGMs a year as a result of its expansion project.

After a capital raise through a successful 2015 BEE deal, Northam has had capital available when competitors have not and has

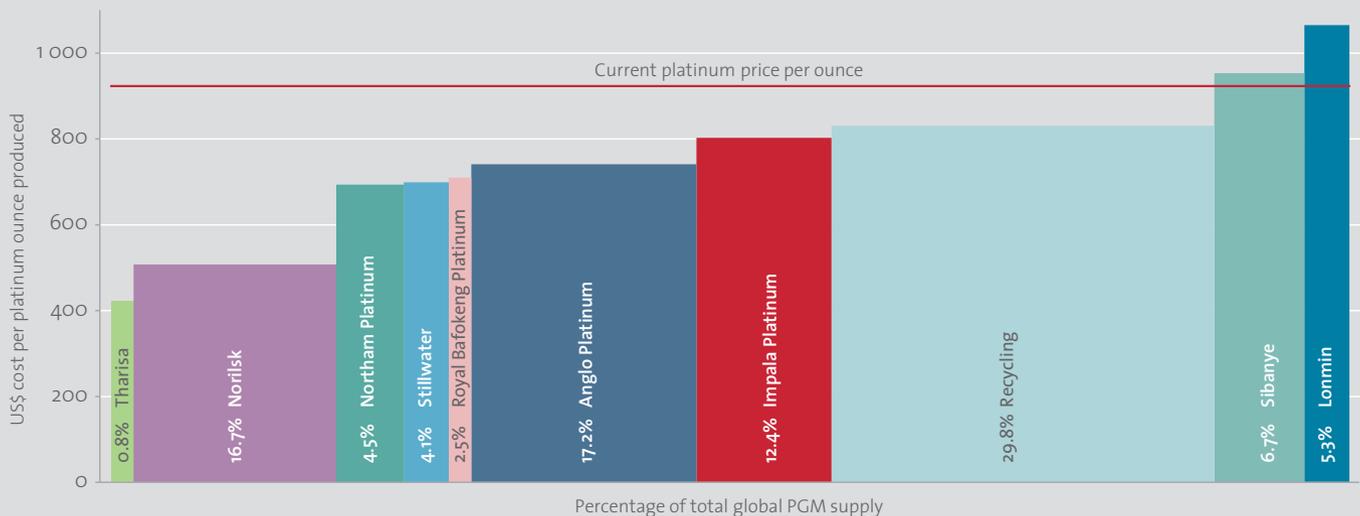
taken the strategic opportunity to buy stressed assets at the bottom of the cycle for a fraction of their replacement value. The Booyesendal expansion was made possible in 2015, when Northam acquired the neighbouring Everest Mine from Aquarius Platinum. As result of challenges at the mine, Aquarius had suspended mining activity at Everest in 2012 and sold the mine, along with related assets, for R450 million. The Everest acquisition included assets with a replacement value of more than R3 billion, such as a concentrator. Having these assets significantly reducing the cost of increasing Booyesendal's production.

A further cost advantage for the mine is that the area has a shallow ore body. This means the cost required to mine a tonne of platinum ore is cheaper than deeper mines which incur significant additional costs to access the ore, transport workers and cool the mine.

A closer look at Styldrift 1

RBP's Styldrift 1 Mine is located near the town of Rustenburg in the North West Province. RBP has invested R6.1 billion in the project since 2009 and the mine is currently under development. The expansion will be completed in two stages - the initial stage increasing production to 250 000 ounces of PGMs a year and the final stage increasing output to over 350 000 ounces a year.

Relative miner profitability projected for 2022



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A key advantage to the Styldrift 1 Mine is its high-value revenue basket, which refers to the value of metal content per tonne of ore mined. The area contains Merensky Reef, a type of ore which has historically commanded 25% greater value per tonne over UG2, the alternative ore mined for platinum.

The mine is bordered by three competitor mines, which could lead to opportunities for collaboration in the future.

Forecasting demand

The primary industrial uses for PGMs are in the automotive industry in catalytic converters (an emissions control device in internal combustion engines) and in the jewellery industry. We believe that platinum demand faces headwinds from a declining diesel market share in Europe along with the changes in powertrain technology as the world moves away from the internal combustion engine in favour of electric vehicles. There is also currently weak jewellery demand in China as PGM producers have cut back on marketing spend in that region in an effort to preserve balance sheets and reduce costs.

However, our view is that in the short to medium term, the bulk of electric vehicles will be hybrids, which will still contain an internal combustion engine and will therefore require an emissions control device, supporting PGM demand. We believe

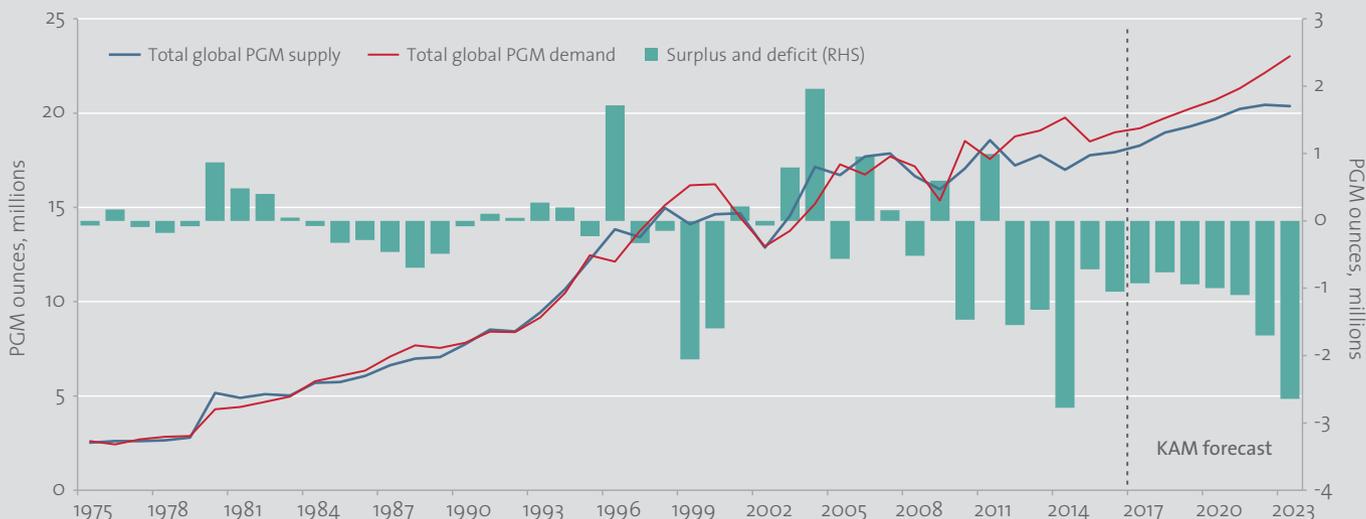
there will be an initial shift away from platinum demand in favour of palladium demand due to the evolving automotive technology and hybridisation. Jewellery demand should begin to grow again in the medium term. Increasing developing world emission standards should additionally support growth in autocatalyst PGM demand in the coming years, especially in the heavy duty diesel vehicle market.

If demand levels fall below our expectation, RBP and Northam will be favourably positioned relative to competitors due to their low production costs. In such a scenario, high-cost producers that have very little flexibility in reducing costs any further will either need to shut production, or raise further shareholder capital to sustain their current declining output.

Looking ahead

RBP and Northam are re-investing in the growth of their operations when competitors have chosen to implement austerity measures to safeguard their balance sheets. Our clients benefit from our investment in these two companies as they currently have strong balance sheets with growth that will position them favourably against competitors on the cost curve. **UP**

PGM* demand outpaces supply



*Platinum, rhodium and palladium
Sources: Johnson Matthey, Kagiso Asset Management research



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