PRECIOUS APPRAISAL

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MARKET SPOTLIGHT

The Inflation Reduction Act could help to make the hydrogen economy a reality

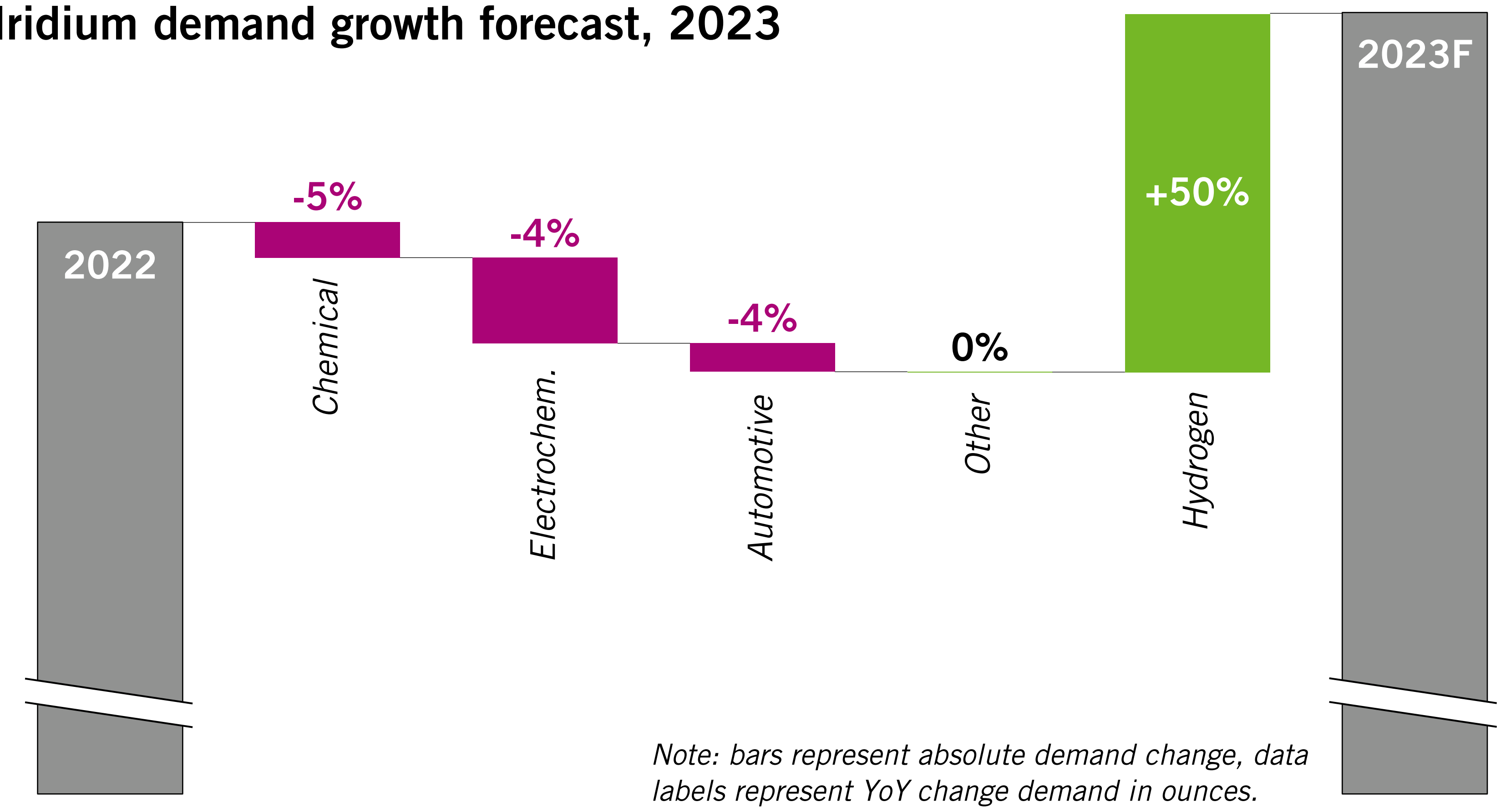
The Inflation Reduction Act places the US at the forefront of the hydrogen economy. The aim of tax credits included in the Inflation Reduction Act (IRA), passed last year, was to reduce the cost of green hydrogen production. Under the new law, clean hydrogen plants can receive a production credit of up to $3/kg H_2 produced for a maximum of 10 years (2023-2032), with a preferential rate for low carbon-emitting plants, as part of ~$13 billion in hydrogen funding (source: McKinsey & Co.) for supply and demand stimulation. The expiry date incentivises bringing projects online rapidly. Low-carbon tax credit tiering lends itself to renewable electricity power, to which proton exchange membrane (PEM) technology, using Ir-Pt catalysts, is more suited than alkaline or solid-oxide alternatives.

Other governments are also seeking to push green hydrogen up the adoption curve. The new EU Green Deal Industrial Plan, which was published last week, aims to provide faster access to funding and reduces bureaucratic hurdles for green technology, including green hydrogen. Part of this will include a competitive bid for producers of green hydrogen to gain a fixed premium on each kg of hydrogen produced for 10 years. Later, a production subsidy will considered. Initial funding will total €800 million to help meet REPowerEU targets for green hydrogen production. REPowerEU is the European Commission's current green hydrogen roadmap that includes the ambitious goal to add 17.5 GW of electrolyser manufacturing capacity by 2025. Estimated total global installed capacity by the end of 2022 was 15.2 GW (source: Bloomberg), of which ~40% is PEM.

Subsidies and tax breaks enable the initial growth phase. The majority of in-progress, PEM-based hydrogen production projects are pre-construction (source: IEA), either awaiting final investment decisions or earlier in the development process. The tax credits (US) and funding (EU) available in the short term should increase the likelihood of projects reaching completion. The higher relative costs of green hydrogen compared to other colours of hydrogen and its narrow end-uses currently restrict wider adoption. Artificially lowering production costs through subsidies and tax credits may allow for the development and maturation of new end-uses such as hydrogen fuel-cell mobility, thus growing the demand profile for green hydrogen once current incentives end. The most likely sectors in which hydrogen mobility can be developed are heavy-duty road vehicles and maritime transport – where electrification is more difficult but CO_2 emission reductions are still required.

Iridium thrifting also ensures that demand can be met. As a by-product of primary platinum mining, iridium output is relatively inelastic. The risk is that with government money accelerating the adoption of electrolysers, iridium supply will not keep up with demand growth. R&D is ongoing to reduce the amount of metal used per electrolyser membrane, which will enable electrolyser capacity to scale up and ensure mine supply does not act as a bottleneck to green hydrogen implementation.

Iridium demand growth forecast, 2023



Source: SFA (Oxford)

PRECIOUS METALS REVIEW

Gold

79
Au

	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
$/oz	1,868	-3.19%	1,960	02/02/2023	1,866	03/02/2023
€/oz	1,726	-2.90%	1,781	02/02/2023	1,721	03/02/2023

Rate hikes slow again, but the Fed is not done yet. The gold price reached fresh 9-month highs last week following the eighth straight interest rate hike in the US central bank's fight against inflation. The dollar weakened owing to the smaller 25 bp raise in interest rates, which pushed up gold to $1,960/oz intra-day Wednesday before reversing as the dollar recovered towards the end of the week. Fed Chairman Powell said that the Fed sees "a couple" more hikes in the pipeline. This is in stark contrast to traders who are currently pricing in a pair of interest rate cuts before the year is out. The Fed tends to be a market follower rather than a market leader. After this latest hike, the 2-year US Treasury yield is well below the federal funds rate, suggesting cuts are, in fact, possible this year and adding to the bullish case for gold.

The ECB also needs to keep its foot on the gas. Inflationary conditions in some of the Eurozone's largest economies are far from over. Both German and French core CPIs are yet to see a peak, while in Spain core inflation ticked up marginally in December and January. These data give the ECB room to continue the record pace of interest rate hikes in the bloc for longer. This, in turn, should result in a stronger euro – particularly while the Fed continues cooling its monetary policy – and a weaker dollar. The outcome may be higher gold prices in both euros and dollars, with the latter outperforming.

India was the largest consumer of gold jewellery in 2022, despite a moderate net decline in demand. Gold demand in India reached just over 600 tonnes for the full year in 2022, for the first time in 11 years overtaking Chinese mainland jewellery demand which totalled 571 tonnes (source: World Gold Council) and fell by 15% year-on-year. Chinese demand was hampered by recurring lockdowns in major cities, and was also constrained in Q4'22 owing to the spike in infections following the relaxation of the zero-Covid policy. There is cautious optimism for gold jewellery demand growth in China this year, once the current wave of Covid infections wanes and the economy improves. In a moderately bullish scenario where the dollar price of gold nears all-time highs this year, the local price in India is likely to rise, forming a headwind to jewellery demand there. If buying picks up as GDP growth accelerates, it is possible that Chinese jewellery consumption could again surpass that of India this year.

PRECIOUS METALS REVIEW

Silver

47
Ag

	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
$/oz	22.38	-4.92%	24.64	02/02/2023	22.29	03/02/2023
€/oz	20.68	-4.62%	22.48	02/02/2023	20.56	03/02/2023

Higher base metal production should boost global silver production in 2023. The weakening of the dollar has not helped the silver price this year. Silver had been trading in a tight range between $23 and $24/oz, while gold rallied, pushing the gold:silver ratio to 83.4. Like gold, silver hit a new 10-month high of $24.63/oz last week, before sharply correcting below $23/oz by the end of the Friday. Silver demand is forecast to grow this year to record highs thanks to the accelerating pace of solar photovoltaic installations and demand from the automotive sector. The two largest producers of silver as a by-product of base metal mining recorded declines in silver output in 2022. KGHM produced 1,327 tonnes of silver (-3% year-on-year) while Glencore generated 738 tonnes (-25% year-on-year), mainly from its zinc operations. However, global lead-zinc output and copper production are forecast to grow by 2.7% and 5.3% this year, respectively. Silver mine supply is also expected to grow incrementally in 2023, along with projections for base-metal production.

PRECIOUS METALS REVIEW

Platinum

78
Pt

	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
$/oz	981	-3.14%	1,039	02/02/2023	980	03/02/2023
€/oz	906	-2.89%	950	03/02/2023	905	03/02/2023

The world's largest producer of platinum saw a significant decrease in production last year. Anglo American Platinum produced 1.78 moz of refined platinum in 2022, a 26% year-on-year decline. The company's platinum and overall 3E PGM production was the lowest in more than a decade (excluding the pandemic). This has been attributed to delayed refurbishment of processing facilities towards the end of the year and curtailed power supply from the state electricity utility Eskom. However, mining continued despite higher levels of Eskom load-shedding, though processing facilities may have been impacted, adding to a build-up of work-in-progress material above ground. South African supply is estimated to have fallen by ~3% last year against a rebound from Covid in 2021. Overall, excluding investment, the platinum market is forecast to remain in surplus in 2023, though a smaller surplus than in earlier forecasts. South African mined supply is expected to reach 4.5 moz this year, an increase of 6.5% year-on-year, as above-ground stocks built up last year are processed and released to the market.

Truck manufacturers see a strong 2023 ahead despite economic headwinds. Heavy-duty truck delivery volumes expanded at the end of last year, reaching near record highs for PACCAR, the primary truck manufacturer in the US. Volvo saw Q4'22 deliveries reach new all-time highs, driven by economic recovery in India and pre-buying in Brazil ahead of new emissions regulations that came into force on 1 January. The largest truck manufacturers see global heavy-duty sales remaining around current levels in 2023, in part owing to pent-up demand to replace an aging fleet following lower sales post-2019 and the easing of supply-side constraints. The current economic outlook for the rest of the year includes significant downside risk to heavy-duty sales, as the EU and US enter recession which typically brings lower demand for freight transport and therefore new truck demand. Heavy-duty autocatalyst demand is forecast to grow by >10% this year to over 600 koz. However, downside demand risk may add to the platinum market surplus this year and could weigh on the price.

PRECIOUS METALS REVIEW

Palladium

46
Pd

	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
$/oz	1,618	-0.29%	1,706	01/02/2023	1,597	31/01/2023
€/oz	1,494	-0.11%	1,559	03/02/2023	1,477	31/01/2023

Decline in the EU light-vehicle market has not slowed EV growth. Registrations of battery electric vehicles (BEVs) continued to rise in 2022 despite an overall contraction in the EU's passenger vehicle market. The market share of BEVs grew to 12.1% versus 9.1% in 2021, and overall BEV registrations increased by 28% to more than 1.1 million units (source: ACEA). Hybrid vehicles also saw strong growth, and on a quarterly basis Q4'22 was the first time that electrified vehicles (BEV + hybrids) outsold pure combustion-engine vehicles.

On a global scale, similar trends are evident, with electrified passenger car sales in China making up 28% of domestic sales in 2022, and growth expected in the US this year as IRA subsidies come into force. Overall light-vehicle sales are estimated to climb in 2023, primarily as a result of supply-side constraints fading. However, palladium autocatalyst demand growth is expected to be capped by BEV market share growth and platinum-for-palladium substitution.

The palladium price failed to hold above $1,700/oz level last week and could be exposed to further downside if the price closes under $1,600/oz.

PRECIOUS METALS REVIEW

Rhodium, Ruthenium, Iridium

45 Rh 44 Ru 77 Ir

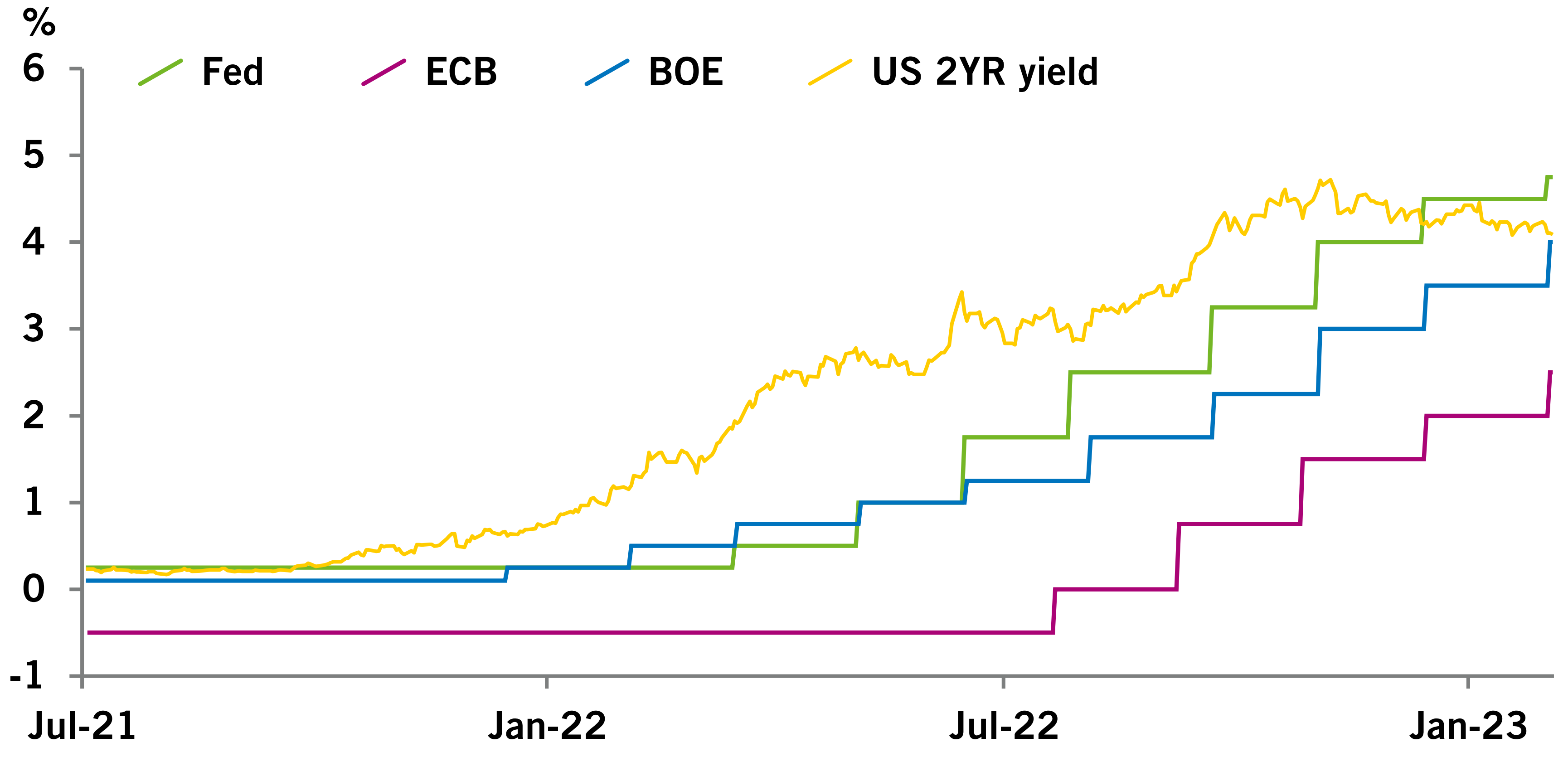
	RHODIUM	RUTHENIUM	IRIDIUM
Reporting Week	$13,500/oz	$515/oz	$4,750/oz
Previous Week	$13,550/oz	$515/oz	$4,750/oz

Falling smartphone sales are likely to translate to lower iridium demand. Rising inflation and economic uncertainty in both emerging markets and developed economies are weakening consumer demand for smartphones. Iridium crucibles are used to produce lithium tantalate which is used in smartphone electronics. Smartphone shipments fell 11.3% year-on-year in 2022 to 1.21 billion units, the lowest since 2013. International Data Corporation (IDC) predicts that smartphone shipments will rebound by 2.8% this year. However, the fourth quarter of 2022 was particularly poor in terms of shipments, even with the typical seasonal boost in sales. This suggests that the impact of a recession in the US and EU means the risk for demand is to the downside.

Rhodium dropped $50/oz while ruthenium and iridium are yet to show any price movement since 11 January.

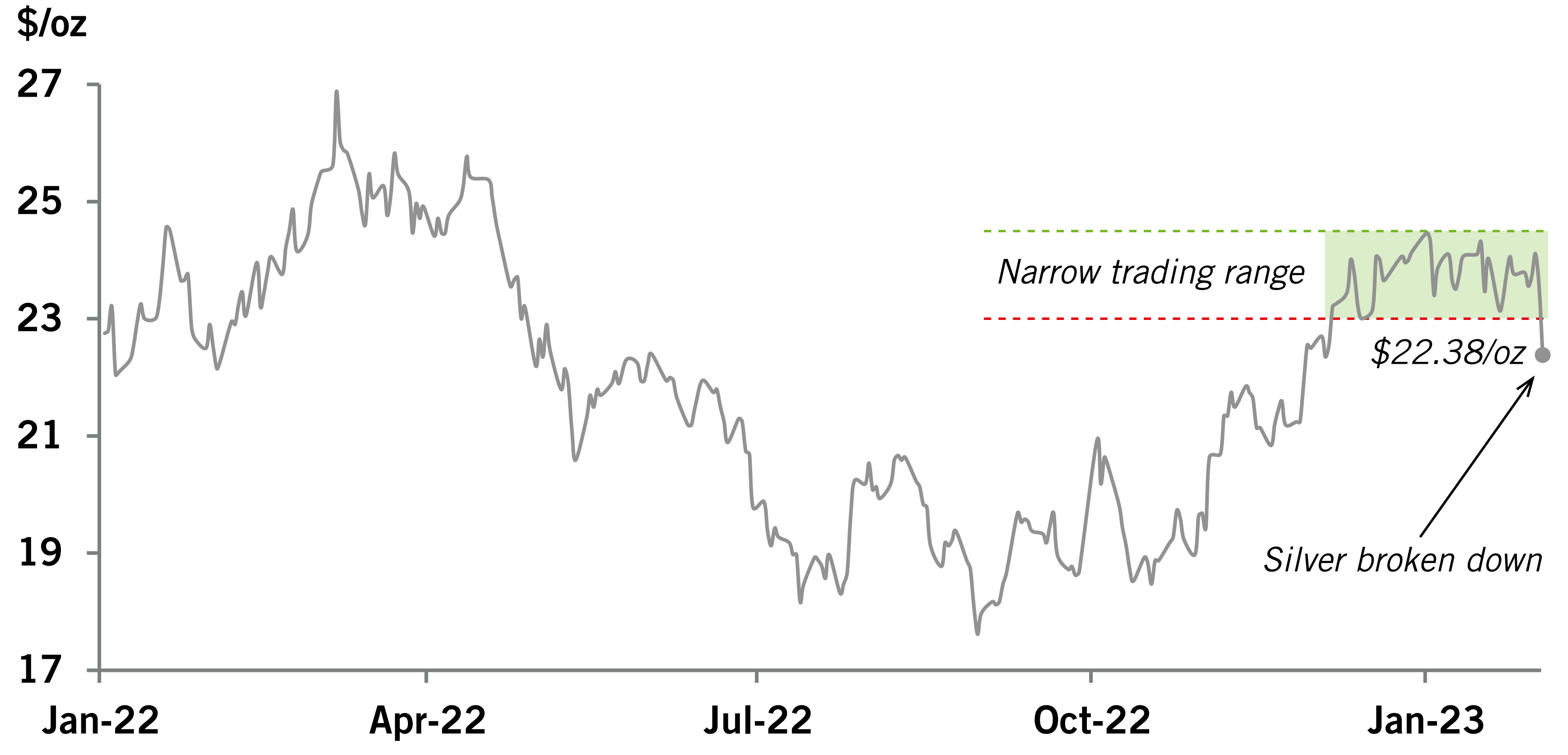
TRENDS AND INVESTMENTS

Central banks' interest rates vs US 2YR T-Bill yield



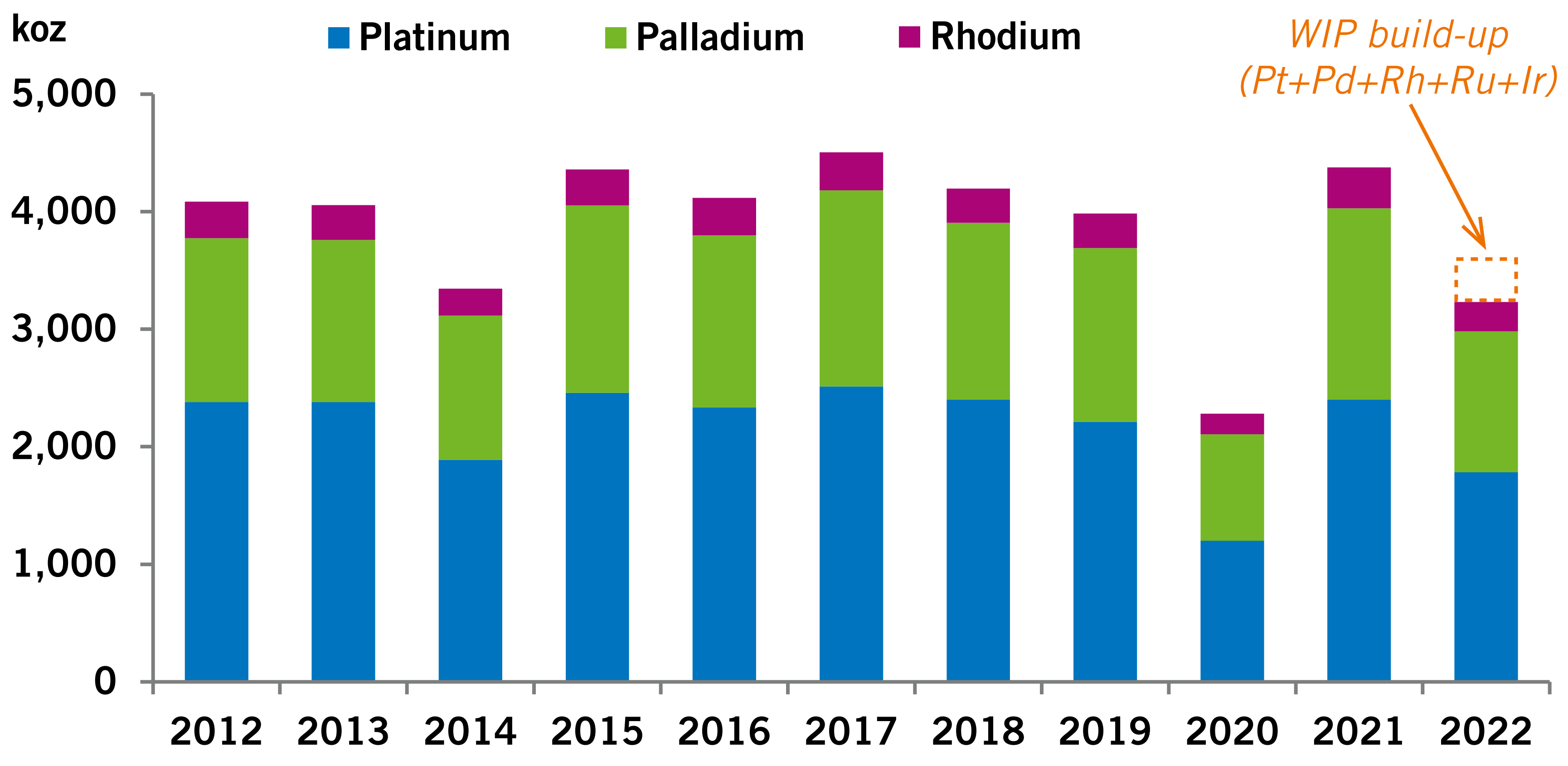
Source: SFA (Oxford), Bloomberg

Silver price performance



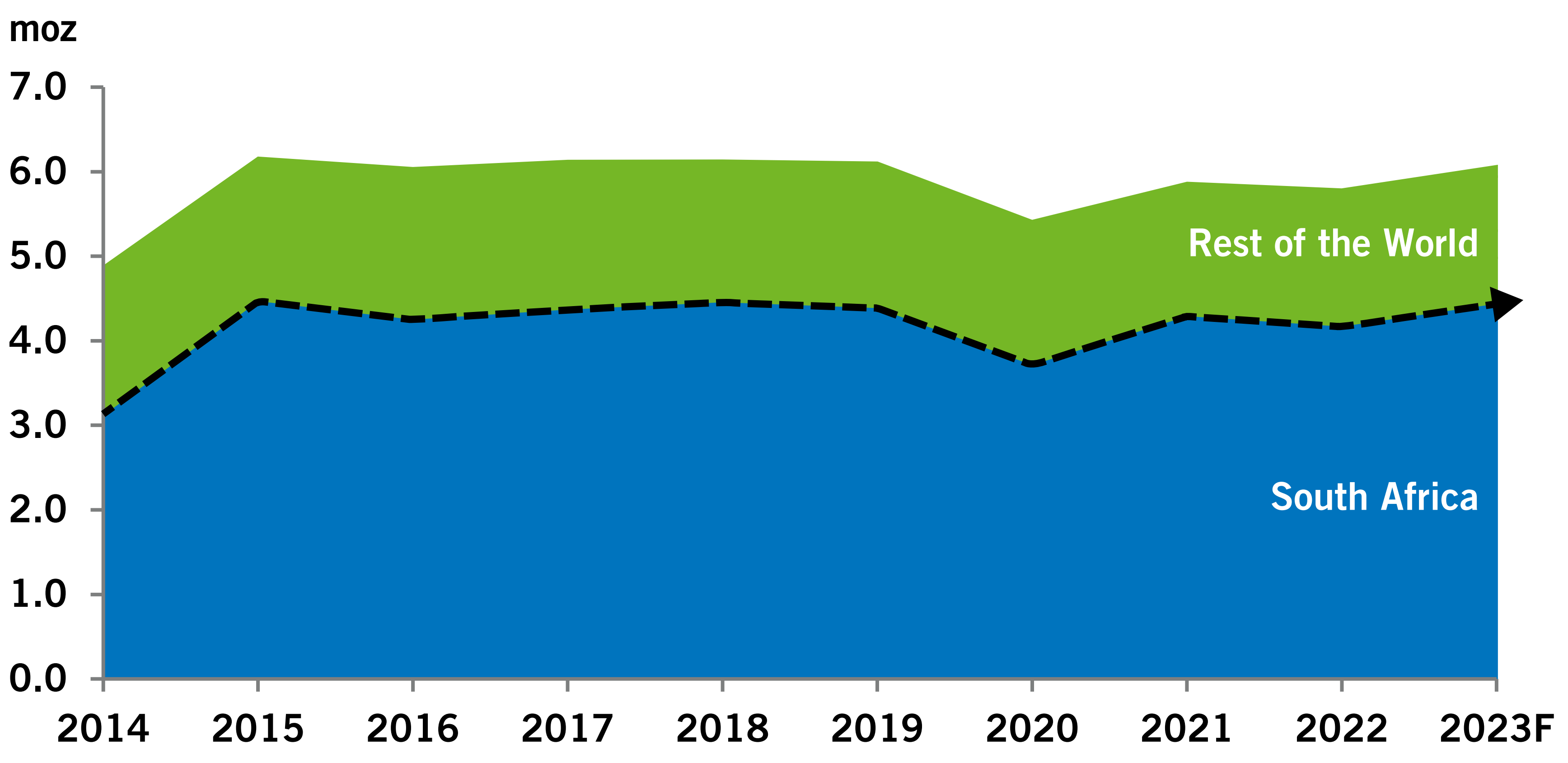
Source: SFA (Oxford), Heraeus

Anglo American PGM production



Source: SFA (Oxford), Anglo American Platinum

Global platinum production



Source: SFA (Oxford)

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