

PRECIOUS APPRAISAL



MARKET SPOTLIGHT

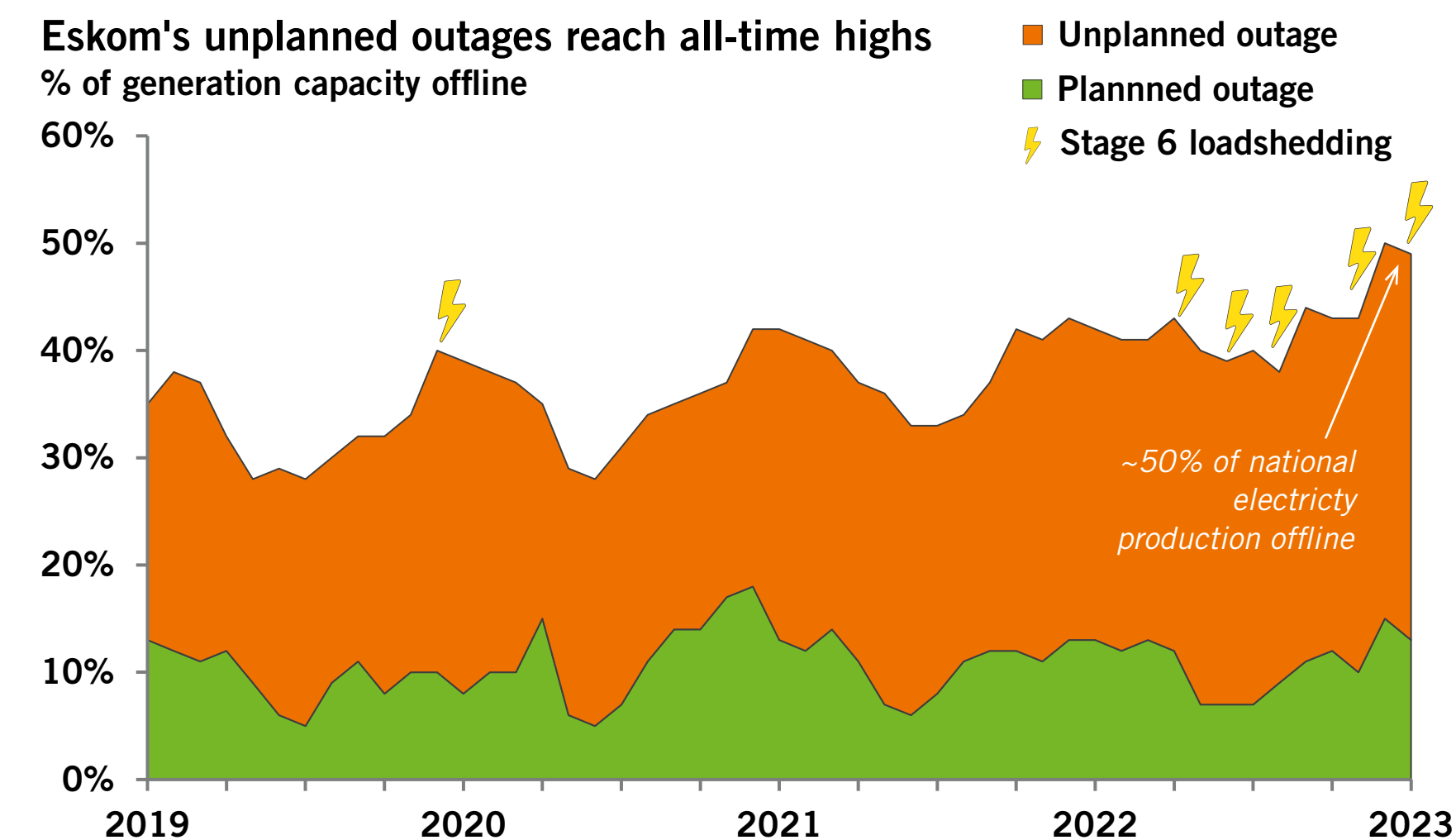
PGM supply at risk in South Africa as power cuts continue

Troubles with power supply plagued South African platinum miners last year. Power use curtailment was imposed on miners on 205 days in 2022, including at Stage 6 of loadshedding when miners must cut electricity consumption by ~50%, rather than undergo full power cuts like the public. Mines will cut usage at energy-intensive processing facilities to reduce consumption in order meet required load curtailment when necessary and depending on a mine’s individual situation.

Platinum production disruption is likely to extend deep into 2023. Late last year, Eskom drained funds to buy diesel used to supplement powerplant generation. This is likely to lead to more extreme loadshedding until the end of FY’23. Eskom predict steady-state stage-3 loadshedding until August 2023, but levels of generation capacity undergoing maintenance is ramping up. With total planned and unplanned generation outages currently reaching ~50% of installed capacity, the risk of higher-level loadshedding is high.

PGM miners are planning to diversify electricity generation. South Africa’s National Energy Crisis Committee suggests that nearly 18 GW of additional generation capacity could be added to the grid in the next 24 months. The Minerals Council of South Africa sees a pipeline of 7.5 GW of mining industry-owned projects and estimate that less than 3 GW could be operational on that timeline. These projects are primarily wind and solar-based, meaning that supply is likely to be intermittent and not able to compensate for Eskom shortfalls. The largest announced plans for PGM miners are 425 MW of solar and wind generation at Sibanye-Stillwater’s operations, and Northam has secured rights to energy from private wind farms that could provide up to 50% of the company’s current energy use.

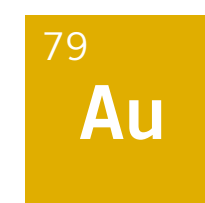
There is a risk that the combination of severity and frequency of loadshedding could lead to a build-up of unprocessed PGM ore and metal inventory. The increasing frequency of load-shedding allows miners less time between power cuts to catch up with lost processing time, particularly if the processing facilities normally run at full capacity; thus stockpiles and inventories could build up over time. Although stock release from Anglo American’s Polokwane smelter rebuild adds ~250 koz 4E PGMs to mine supply this year, overall, the palladium and rhodium markets are seen as being near to balance. **Eskom-related impacts on producers increase the risk of supply constraints which could push the palladium and rhodium markets into deficit and result in more price volatility.**



Source: SFA (Oxford), Eskom

PRECIOUS METALS REVIEW

Gold



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	1,925	0.65%	1,938	20/01/2023	1,897	18/01/2023
€/oz	1,777	0.46%	1,786	19/01/2023	1,759	17/01/2023

Chinese gold supply grew in 2022 while Covid outbreaks cut demand.

China's largest gold mining province, Shandong, saw gold mine production return to near pre-pandemic levels in 2022, despite Covid outbreaks throughout the year. Domestic production totalled 372 tonnes last year, an increase of 13% year-on-year (source: China Gold Association). Overall consumer demand (jewellery + bar and coin demand) was estimated to have totalled 913 tonnes last year, equal to an 11% decline year-on-year from a relatively high base in 2021. Consumer demand was negatively impacted by lockdowns in large cities around April and December. Gold and silver jewellery sales fell 18.4% year-on-year in December (source: National Bureau of Statistics of China). Sales are expected to recover somewhat during the Chinese New Year holiday this week, traditionally a major gold-buying period. Covid infections may be high but local premiums for gold have averaged \$22/oz so far this year, suggesting relatively strong demand.

ETF investors have not bought into the gold price rally. Total holdings in global gold ETFs currently sit just below 94 moz, having fallen from 107 moz in Q2'22. The rally in the gold price since November has not been accompanied by an increase in ETF holdings which have remained around 94 moz. The gold price has been trending higher, helped by a weakening dollar, and if investors start to take more interest that could add further support. However, the price is now overbought, suggesting a pause or pull-back could occur in the near term.

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Silver



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	23.84	-1.07%	24.37	17/01/2023	23.17	19/01/2023
€/oz	22.01	-1.27%	22.51	17/01/2023	21.45	19/01/2023

China’s solar installations disappointed in 2022 but still reached new heights. China’s annual solar photovoltaic (PV) installations topped 87 GW last year. More than 24% of the total (21.7 GW) was installed in December alone as companies attempted to meet national targets, and the cost of polysilicon began to fall. Despite this end-of-year push, installations fell nearly 20% short of the National Energy Administration’s (NEA) target of 108 GW. As a result, annual silver paste demand in 2022 is likely to be lower than anticipated based on the installation forecast, though still a record figure. Global PV silver demand in 2022 is estimated to have been approximately 130 moz. Silver paste used in PV panels is one of the highest-cost factors in solar cell production, and efforts are made to reduce the amount used over time. An average reduction of ~80% in silver content has been made over the last decade, though growth in demand for solar power has outpaced this. The NEA is targeting ~100 GW of new PV installations in China this year. With the reopening of the economy and less disruption from Covid this could be achieved, supporting a consecutive year of record PV silver demand.

The silver price stalled on its upward trajectory last week as weak economic indicators were released in China and the US. Growth in Chinese industrial production in December fell to the lowest level since May 2022 amid protests against Covid restrictions and then rising cases once those restrictions were removed. The expectation is that industrial demand will improve with the economy once the current wave of Covid cases subsides. However, the economic trend may be going in the other direction in the US. The Empire State manufacturing survey for the New York region came in at its lowest level since the first Covid wave, adding to signs that the US economy is slowing.

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Platinum

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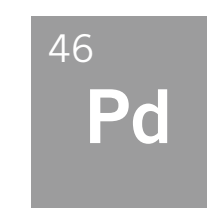
	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	1,048	-1.36%	1,078	18/01/2023	1,013	19/01/2023
€/oz	969	-1.49%	990	18/01/2023	937	19/01/2023

Platinum ETF holdings shrank considerably in 2022 and investment was net negative for a second consecutive year. More than 500 koz of platinum was removed from global ETFs, with the greatest losses from European-based funds that shed 317 koz over the year (20% of total holdings). The greatest proportional decrease in platinum metal holdings was in Japanese funds that saw a 22% drawdown over the course of the year. The yen platinum price exceeded ¥4,000/g for much of the second half of 2022. At this price level, Japanese investors tend to take profits. The platinum market is expected to remain in surplus in 2023, but a weaker dollar and a stronger rand could provide some positive price support this year.

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Palladium



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	1,733	-2.47%	1,798	18/01/2023	1,673	19/01/2023
€/oz	1,602	-2.54%	1,654	18/01/2023	1,551	19/01/2023

Germany was the bright spot for the EU’s light-vehicle sales in 2022.

The European light-vehicle market ended last year on a positive note, with registrations growing 12.8% year-on-year in December – albeit against a low base in 2021. On an annual basis, passenger car registrations fell 4.6% year-on-year in 2022 owing to the lack of semiconductor chips in the first half of the year. Regional palladium demand is estimated to have declined year-on-year in line with registrations, to 1.6 moz, the lowest level since 2009 (excluding 2020). Germany was the only major car market to grow registrations year-on-year, with a 1.1% expansion. European demand for autocatalytic palladium is forecast to fall again in 2023, as the effects of recession in the EU and increasing EV market share crimp the number of internal combustion engine vehicles produced. Globally, the palladium market is expected to switch from a deficit to a small surplus.

The palladium price fell 5.9% to a low of \$1,673/oz on a weaker demand outlook for 2023 before recovering slightly, finishing on \$1,733. The price has spent the last month trading between \$1,650/oz and \$1,840/oz. A new trend may be established once the price moves through one of those levels.

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PRECIOUS METALS REVIEW

Rhodium, Ruthenium, Iridium



	RHODIUM	RUTHENIUM	IRIDIUM
Reporting Week	\$13,650/oz	\$515/oz	\$4,750/oz
Previous Week	\$13,650/oz	\$515/oz	\$4,750/oz

Europe will not let the US pop its ‘hydrogen bubble’. The EU is the leader in hydrogen economy innovation, accounting for 28% of global hydrogen production patent filings, compared to 19% in the US and 3% in the UK (source: IEA). For companies to qualify for some of the \$369 billion in upcoming subsidies proposed in the US’s Inflation Reduction Act, they must manufacture in the US or use products made there. To reduce the risk of leading hydrogen economy companies leaving the EU in favour of the US, the EU Commission President last week proposed that the bloc will launch a similar programme for renewables, hydrogen and other clean-tech industries. This could make funding more easily available and introduce more subsidies for renewable tech production facilities. Support for electrolyser production could lift iridium demand further. Ongoing efforts to reduce the amount of iridium used in each electrolyser should enable supply to keep up with this demand growth.

A falling rhodium price disproportionately squeezes South African miners’ margins. The rhodium price has dropped by 39% over the past 10 months. Rhodium currently makes up an estimated 42% of South African miners’ revenues compared to 12% for non-SA miners. Meanwhile, mining input costs are estimated to have increased by 20% year-on-year in 2022 and are still rising. CPI inflation in South Africa is forecast to stay above 5% in 2023, and Eskom has announced intentions to increase electricity tariffs by 18.65% from April with another 12.74% hike in 2024. For South Africa’s PGM miners, energy costs currently make up 9% of mining costs but this would increase to 12.5% by 2024 with the new tariffs (source: Minerals Council South Africa). The rhodium market is predicted to move into a small surplus from a deficit last year and the price is expected to continue to soften.

The small PGM prices were relatively subdued last week. Only rhodium showed any price movements, first gaining, then losing \$100/oz to finish even on the week at \$13,650/oz, though the longer-term trend is still to the downside.

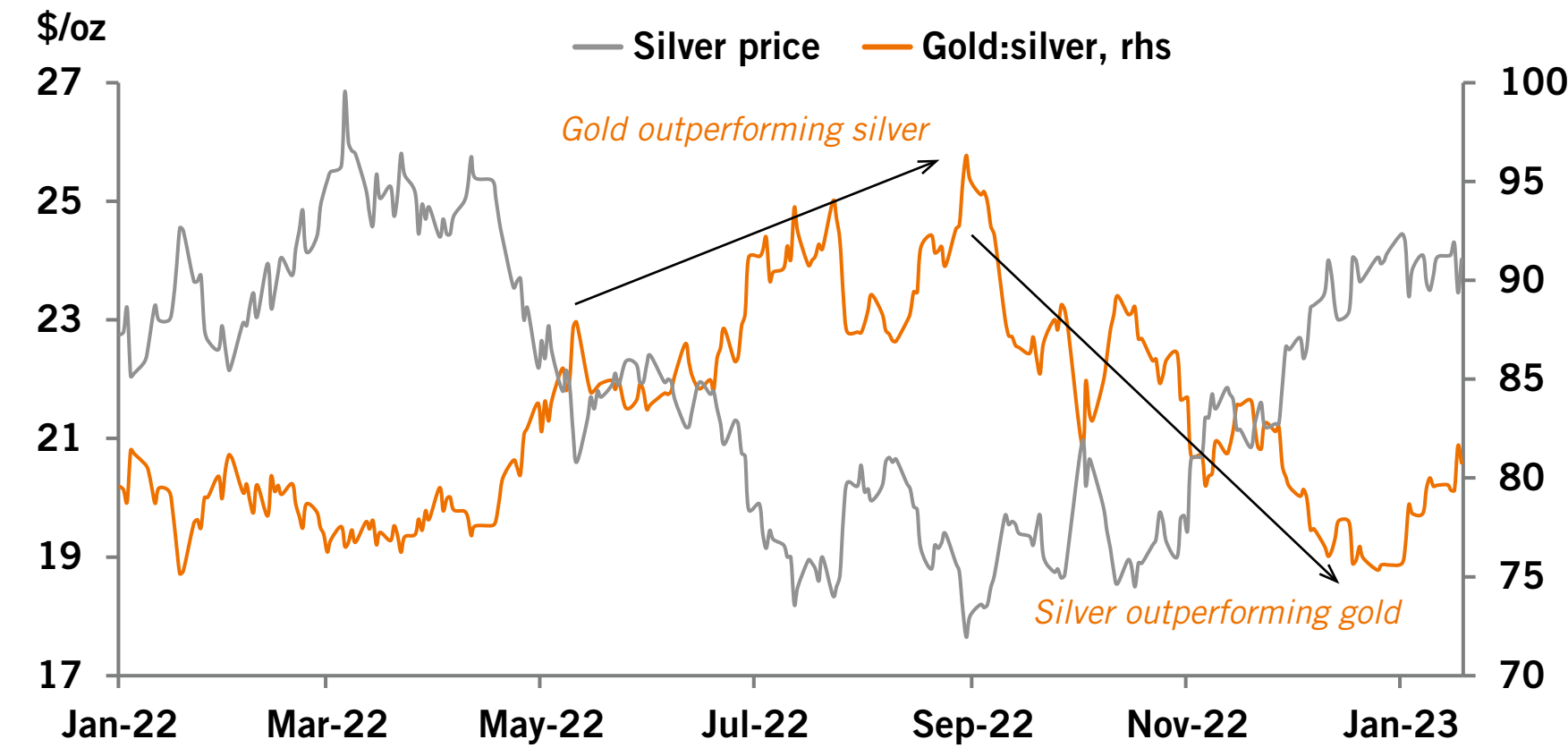
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TRENDS AND INVESTMENTS

Silver price vs. gold:silver ratio



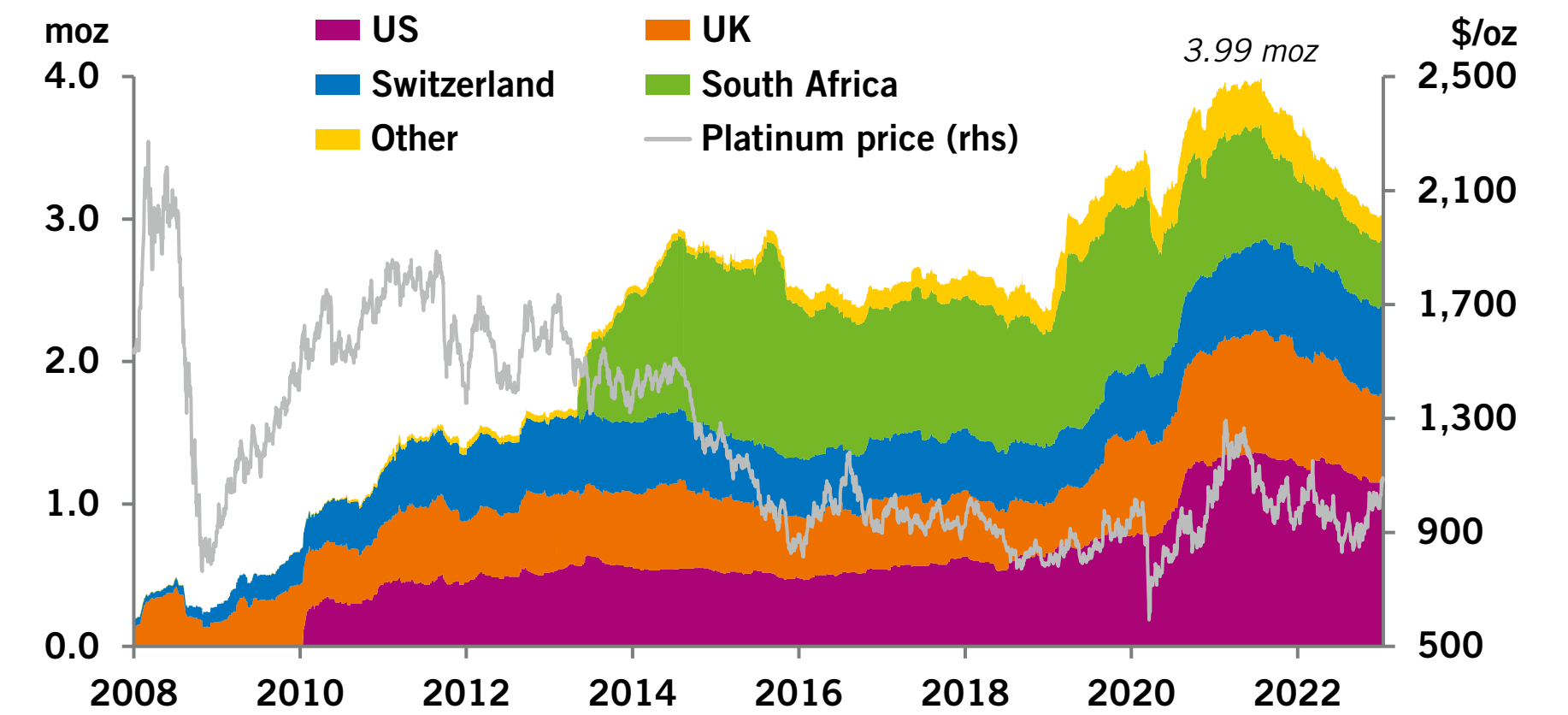
Source: SFA (Oxford), Heraeus

Palladium price



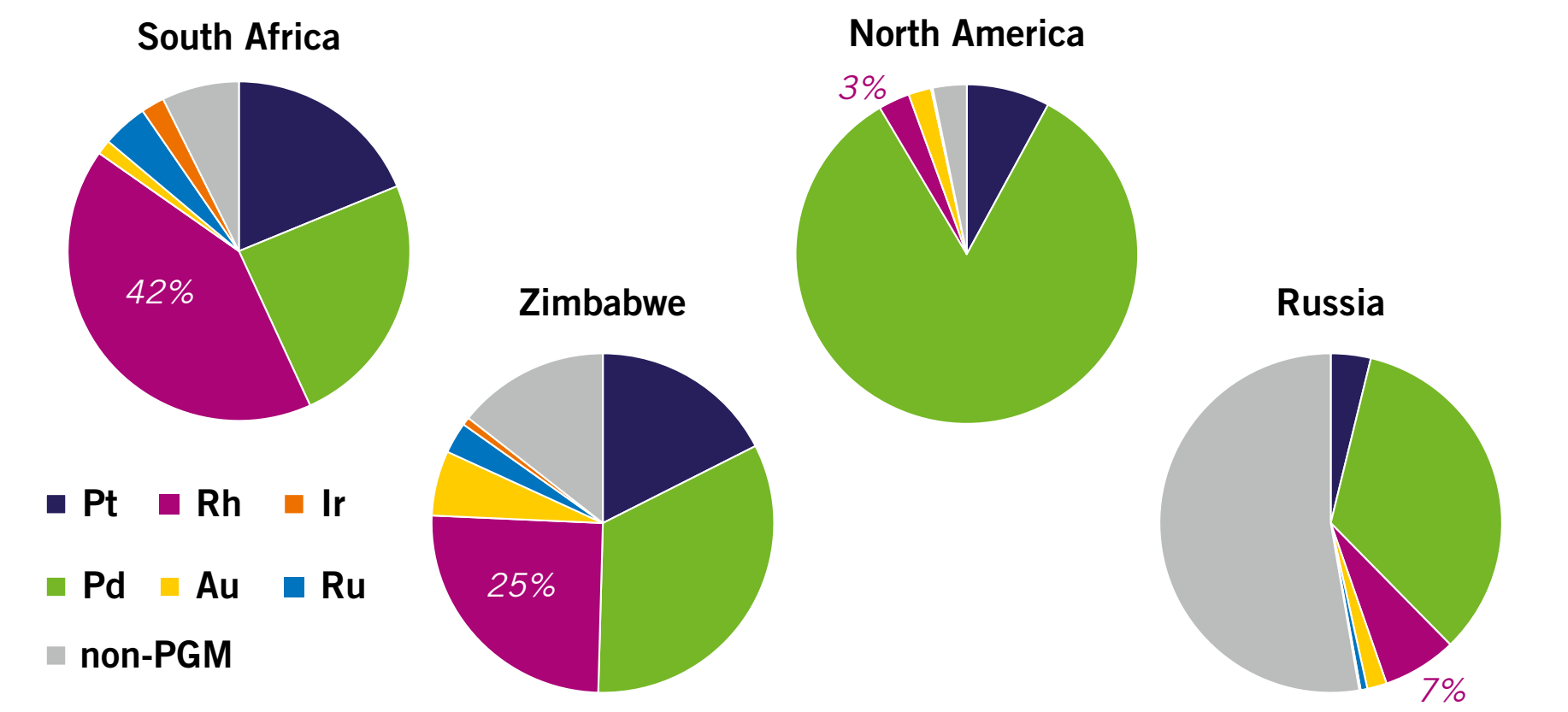
Source: SFA (Oxford), Heraeus

Global platinum ETF holdings



Source: SFA (Oxford), Bloomberg

PGM mines regional revenue split, 2022



Source: SFA (Oxford)

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