Heraeus

HERAEUS PRECIOUS FORECAST – UPDATE

1st September 2020

PRECIOUS METALS FORECAST – UPDATE

79
Au

Gold

YTD change: **+28.8%**

Forecast update | High: **$2,200/oz** | Low: **$1,850/oz**

Safe haven demand can keep gold at record levels

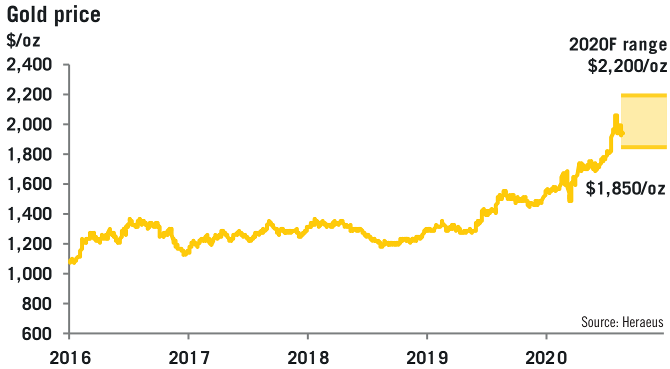
A combination of low-to-negative government bond yields and unprecedented fiscal and monetary stimulus has driven safe-haven gold demand in the year to date. Indeed, the macroeconomic and geopolitical landscape is expected to remain supportive of gold for the rest of the year. The economic outlook remains uncertain amidst the ongoing coronavirus pandemic and the continuing tensions between China and the US. Additionally, a divisive US presidential election is in prospect.

Record gold prices and economic disruption have weighed heavily on consumer demand. Gold prices have hit record highs in most currencies this year. Jewellery purchases in the first half of the year slumped 46% year-on-year as major markets were in lockdown and disposable income was slashed. Even with a seasonal uptick in jewellery purchases in India and China, the two largest gold-consuming nations, in the fourth quarter consumer demand is unlikely to recover anywhere close to previous years. This is a significant headwind for gold demand moving forward.

Central bank gold buying is still net positive but has slowed compared to previous years. Russia has paused its buying, and China has not increased its holdings since September 2019. Central bank purchases are unlikely to pick up in the later stages of 2020.

Mine production is forecast to slip modestly in 2020 owing to Covid-19-related disruption in the first half of the year, although a high gold price is expected to incentivise supply growth and stimulate recycling.

Despite weak consumer demand, strong investor demand is likely to continue to provide support for gold. A great deal of political and economic uncertainty is already priced in. However, the pandemic is far from over and if the economic outlook worsens, central banks could increase their monetary interventions yet again. Investors will continue to see gold as a safe haven, pushing prices higher. In the near term, gold could move sideways as it consolidates following its rapid rally to record highs in early August. The price is estimated to trade within a range of $1,850/oz and $2,200/oz over the last few months of the year.



47
Ag

Silver

YTD change: **+53.3%**

Forecast update High: **$35.00/oz** Low: **$22.50/oz**

Relative value keeps retail investors interested

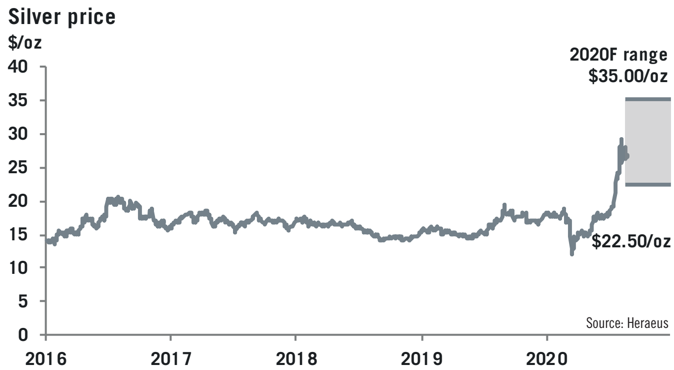
Silver underperformed gold in the first quarter. In the midst of the coronavirus-induced sell-off the price fell to its lowest level in more than 10 years. This resulted in the gold:silver ratio expanding to a record 125.

Silver's industrial demand was hit hard in the first half of the year as manufacturing ground to a halt. Industrial silver demand, including electrical and ethylene oxide, is now showing signs of improvement, although it is still expected to be down year-on-year. Photovoltaic demand is also set to slip this year, with all major PV markets reeling from the impact of Covid-19. The market consensus suggests solar installations will drop by around 15%.

The jump in price in July reflected renewed interest by retail investors potentially priced out of gold. July represented one of the best months on record for silver, recording its largest monthly price gain since 1979. Inflows to silver ETFs have been very strong, with global holdings reaching a record 1,036 moz in August.

Global mine supply is predicted to continue its decline this year, accelerated by production stoppages in several significant mining countries, mainly in South and Central America. As with gold, a high price could boost recycling volumes this year.

Silver has outperformed gold for many weeks now, which has seen the gold:silver ratio fall back to 71. Industrial demand is recovering but investor demand must be sustained for this outperformance to continue. With the economic outlook still uncertain, further stimulus measures by governments or central banks could keep investors interested in silver. The price is anticipated to trade within a range of $22.5/oz and $35/oz for the remainder of the year.



78
Pt

Platinum

YTD change: **-4.6%**

Forecast update High: **$1,050/oz** Low: **$850/oz**

Price holding up in an oversupplied market

The platinum market is forecast to remain in a surplus of greater than 1 moz this year (ex. investment), despite downward revisions to mine supply owing to Covid-19. The weaker automotive and jewellery markets have led to a significant contraction in demand.

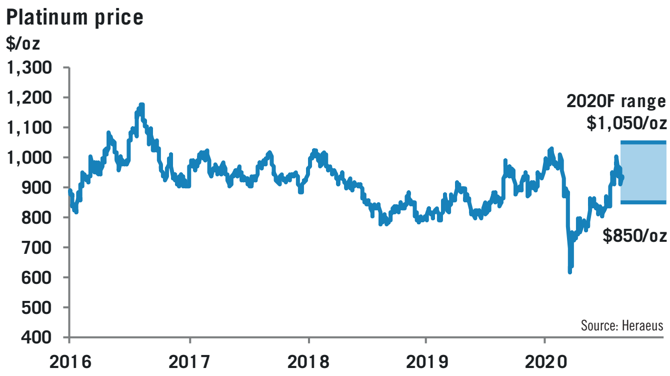
Most platinum mines in South Africa were shut for a national three-week lockdown earlier in the year, although refining and smelting services were considered essential and continued to operate. By the end of the year, South Africa's labour-intensive conventional mines are expected to be operating at 80% capacity and mechanised/hybrid mines closer to 90%. Nevertheless, global mine supply is still set to fall by 15% this year, with supply across all mining regions declining year-on-year.

Secondary platinum supply is expected to suffer a double-digit percentage drop this year. In addition to the anticipated decline in autocatalyst recycling, secondary jewellery supply in China and Japan is forecast to be particularly weak owing to the low platinum price.

A lack of consumer spending has reduced automotive and jewellery demand this year. Automotive demand is projected to slump by 28% year-on-year, owing to a further shrinking of the diesel passenger car share in Western Europe compounded by lower commercial vehicle sales globally. Jewellery demand, led by weakness in China, is predicted to sink by almost a quarter to the lowest level of annual demand since 1992. There is a great deal of uncertainty as to how quickly consumer confidence will return and how strong it will be for purchasing non-essential luxury goods such as jewellery.

The impact of Covid-19 is reducing output at many chemical plants, and slowing capacity expansion in China is also set to weaken catalyst requirements for platinum this year. Glass and petroleum demand have also been downgraded, with utilisation levels reduced at glass fabrication facilities and oil refineries in many regions owing to the pandemic.

Platinum is relatively cheap and remains at a huge discount of more than $1,000/oz to gold and palladium. Investor interest has resulted in platinum ETF holdings reaching a record level this year. However, the fundamental outlook for platinum without investment remains poor and the price is estimated to trade in a range between $850/oz and $1,050/oz over the final months of 2020.



PRECIOUS METALS FORECAST – UPDATE

46
Pd

Palladium

YTD change: **+12.6%**

Forecast update High: **$2,350/oz** Low: **$1,750/oz**

Geographic diversity cushions Covid-19 impact on palladium supply

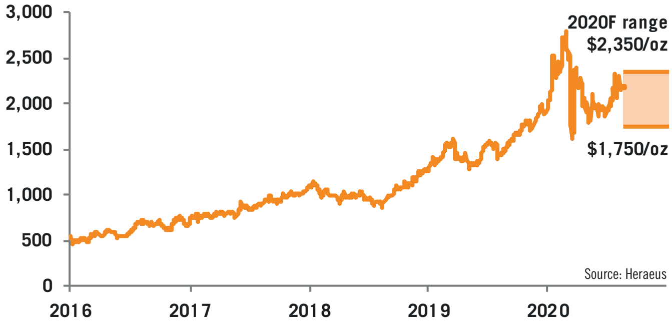
The palladium market is forecast to be close to being balanced this year for the first time since 2009. The Covid-19 pandemic has impacted palladium supply less than demand, and as a result the market should be more balanced.

Primary supply is projected to decline less than that of platinum or rhodium owing to the geographic diversity of the mines. Nornickel's isolated location has ensured that Russian palladium supply will be largely unaffected this year. Secondary supply is forecast to drop by double digits, however, as the pandemic reduced old vehicle scrappage rates and weighed on autocatalyst collections and processing globally. Once lockdowns eased there was a gradual resumption in recycling activity, but material flow is likely to be curbed in the latter part of the year.

China is the largest gasoline auto market and seems to be recovering, so auto demand there is less impacted this year than in other regions. Higher PGM loadings, as many countries adopt stricter emissions standards, are expected to offset some of the losses. However, automotive demand is still expected to fall significantly as a result of the impact of Covid-19 on light-vehicle production and sales.

Chemical palladium demand is also likely to contract this year, with Covid-19 limiting the output of many chemical products and therefore lowering catalyst use and top-up requirements in many regions. Electrical consumption has also been downgraded owing to reduced electronics manufacturing in Asia.

The market tightness for palladium appears to have eased as lease rates have declined. With the market set to be close to balance for the year as a whole, the price is expected to soften, trading in a range of $1,750/oz to $2,350/oz.



45
Rh

Rhodium

YTD change: **+97.6%**

Forecast update High: **$13,250/oz** Low: **$8,000/oz**

The market remains tight and prices volatile

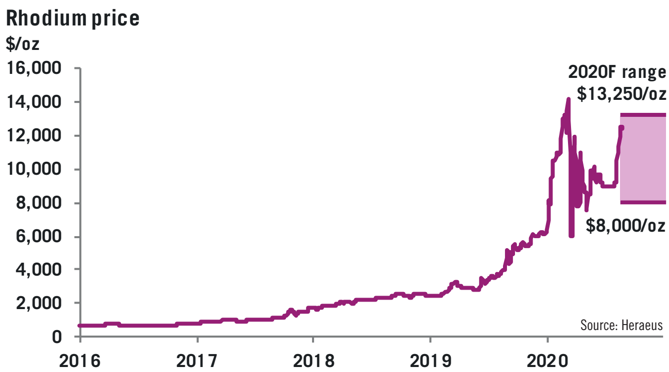
The rhodium market is predicted to remain in deficit this year despite coronavirus-related impacts on demand, as supply has also been reduced.

Rhodium supply is expected to be impacted more than platinum or palladium this year, due to the higher proportion of primary supply from South Africa (81%), the mining region most affected by Covid-19. With supply so geographically concentrated, the rhodium market is reliant on South Africa's mines returning to near full capacity as soon as possible. Mines in the country are currently operating at 80%-90% capacity. Secondary rhodium supply is predicted to decline by more than 15% this year, with more significant reductions in Europe than in the US owing to the region's more widespread lockdowns.

Rhodium will benefit from the fast recovery of the Chinese auto market this year, bolstered by the implementation of China 6 emissions standard. In Western Europe and the US, light-vehicle sales are expected to retreat more than any gains from higher loadings in autocatalysts can make up for.

Automotive rhodium demand is estimated to fall by 16% this year owing to lost vehicle output in all regions. Further price-induced substitution in glass-fibre bushings, as well as the impact of Covid-19, is forecast to reduce glass requirements for rhodium this year. Lower production and catalyst use owing to the pandemic is also likely to limit chemical demand.

Market tightness from disrupted mine supply and low recycling volumes is expected to ease by Q4, with rhodium trading between \$8,000/oz and \$13,250/oz for the remainder of the year.



44
Ru

Ruthenium

YTD change: **+18%**

Forecast update | High: **$310/oz** | Low: **$250/oz**

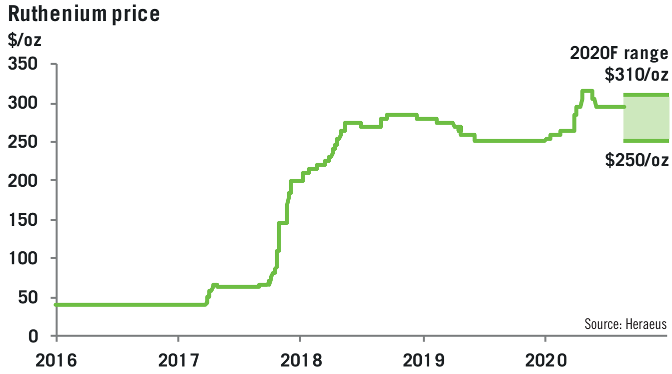
Electrical demand resilient through Covid-19

The ruthenium market is predicted to be in a deficit this year, as Covid-19 has had a greater impact on supply (-20%) than demand (-10%).

Additional mass storage requirements have supported hard-disk drive sales so far in 2020 for data centres to support remote cloud-based work during the pandemic. With a growing number of people working from home permanently, electrical end-uses for ruthenium such as HDDs should be sustained. Chloralkali plants, which use ruthenium and iridium-coated electrodes, have recovered to close to normal production levels, reflecting strong demand for disinfection materials (bleach), although there is a risk this demand could shrink as the pandemic recedes.

The ruthenium price has flattened off since rising at the start of the lockdown in South Africa when mines were shut, so may soften if supply recovery outpaces demand. However, a deficit is emerging which should keep prices supported. Ruthenium is estimated to trade between $250/oz and $310/oz for the rest of the year.

Ruthenium price



77
Ir

Iridium

YTD change: **+10%**

Forecast update | High: **$1,700/oz** | Low: **$1,600/oz**

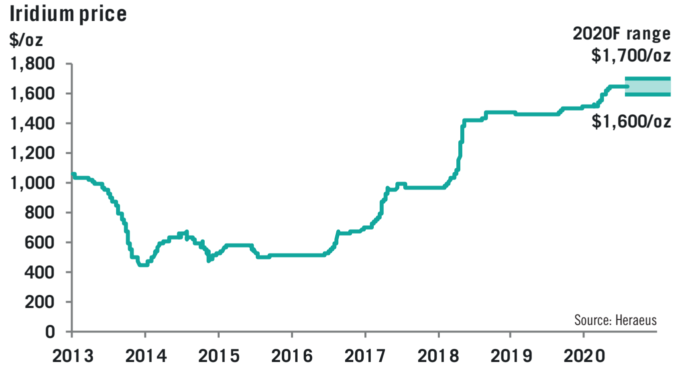
Supply squeeze in H2 supports high prices

Mine output is forecast to fall by around 18% this year owing to the Covid-19 disruption to South African mines, which account for 80% of global output. Despite mine yield in the country being at its lowest during Q2 owing to the nationwide lockdown, the shortfall in refined output is likely to occur during Q3 owing to the timeken for complete recovery of the refined metal.

The US-China trade tensions remain disruptive to the electronics industry, which will become more visible once the impact of Covid-19 subsides. This could adversely affect demand for iridium for crucibles used to make lithium tantalate for smartphones. However, the complex supply chains are likely to restructure reasonably swiftly to ensure that products can be manufactured, representing only minor disruption for the iridium market. Total demand for iridium is forecast to decrease by around 7% this year, with the largest sectors (electrochemical and chemical) faring relatively well.

The iridium price began to rise in early 2020 due to Covid-19 and is likely to remain elevated, with the potential for a higher price caused by temporary market tightness in Q3. Iridium is estimated to trade in a range between $1,600/oz and $1,700/oz until the end of 2020.

Iridium price



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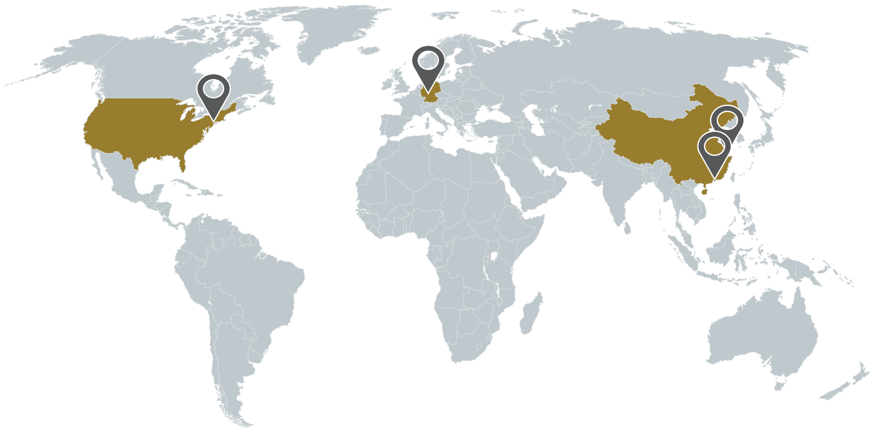

Heraeus, the technology group headquartered in Hanau, Germany, is a leading international family-owned portfolio company. The company's roots go back to a family pharmacy started in 1660. Today, the Heraeus group includes businesses in the environmental, electronics, health and industrial applications sectors.

Heraeus Precious Metals (HPM) – a global business unit within the Heraeus group – is a world-wide leading provider of precious metals services and products. We combine all activities related to our comprehensive expertise in the precious metals loop – from trading to precious metals products to recycling. HPM is among the world's largest refiners of platinum-group metals (PGMs) and an authority in industrial precious metals trading.

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