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HERAEUS PRECIOUS FORECAST 2021

Potential remains for further price upside

The resurgence of Covid-19 in many countries has increased the uncertainty of forecasts for 2021. The vaccine rollout is slower in some regions than others and it will take several months to cover a significant proportion of the vulnerable population. Variant strains have appeared which seem to be even more contagious and mutations could reduce the efficacy of the vaccines. With some countries reimposing lockdowns, the steady economic recovery previously envisioned for 2021 will be less synchronised and what economic recovery there has been following the first wave of infections could be temporarily reversed.

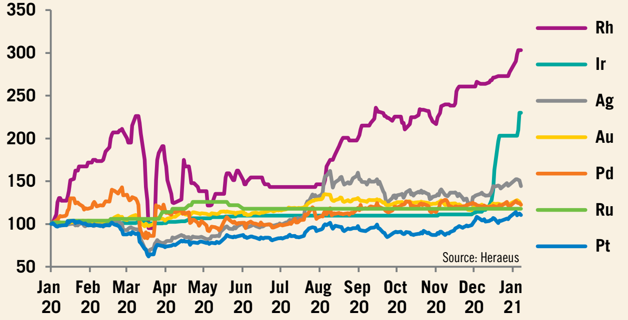
The euro strengthened by 5% against the dollar last year – that looks overdone. Central bank actions do not favour the euro over the dollar. Both the Federal Reserve and the ECB are expanding their balance sheets at the same rate. The US economy appears to be in a stronger position than the Eurozone and the very loose financial conditions in the US relative to the Eurozone could easily tighten which would favour the dollar.

Gold and silver will continue to offer a safe haven from economic uncertainty and the massive ongoing central bank asset purchases and increases in government spending. Inflation expectations have risen, the yield curve is steepening and real interest rates are firmly negative, all of which are supportive of further price gains. With industrial demand improving and continued investor interest, silver's outperformance of gold is expected to continue.

The platinum price has risen more than the fundamentals suggest is warranted. Positive news on the hydrogen economy and the substitution of platinum into some gasoline autocatalysts provide only a small boost to demand this year. The market is expected to have an industrial surplus well in excess of 1 moz this year which will need to be absorbed by investment for a third consecutive year. That may be possible since platinum still looks relatively good value with its large discount to both gold and palladium.

The palladium market is forecast to be much closer to balance this year as global supply is bolstered by some stockpiled material being processed in South Africa.

Prices indexed to 100 1 Jan 2020



As the smallest PGM markets, rhodium and iridium have been the most impacted by the restrictions to refined metal availability caused by processing problems in South Africa. Rhodium and iridium prices have both hit record levels and in the near term could go higher. The situation should improve later in Q1'21 as refined output returns to more normal levels. Ruthenium has so far been less affected.

FORECAST EUR/USD

€/$

2020	Average: **1.14**	Low: **1.07**	High: **1.23**	Price change: **+5%**
2021 Forecast		Low: **1.10**	High: **1.26**	

The US dollar is favoured over the euro

The euro's strength may be hard to maintain in 2021. In the bigger picture, the dollar is not particularly weak and the euro is not especially strong. Despite rising 5% in 2020, the euro is still trading between 1.05 and 1.25 to the dollar, as it has done since 2015. The Fed and ECB are expanding their balance sheets at a similar pace and individual governments are still doing as much as they can to support their economies. In the US, Congress agreed a further $900 billion of support in late December. At the same time, financial conditions are much looser in the US than in the Eurozone and speculative traders are already extremely long the euro and short the US dollar. When such extremes have been reached in the past, the trend tends to be near its end and so a reversal is likely in 2021.

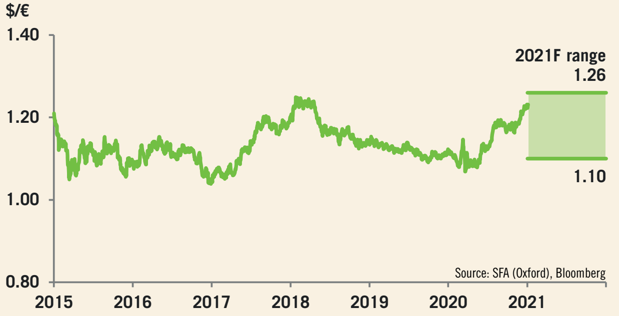
A stronger US economy favours the dollar. GDP growth is forecast by the OECD to be slightly stronger in the Eurozone (+3.6%) than the US (+3.2%) this year, but that is due to the Eurozone economy's steeper decline in 2020 (-7.5% vs. -3.7%). This rebound still leaves the Eurozone economy further below its 2019 GDP level than the US economy. A Brexit trade deal has been agreed which avoids significant disruption to trade and is therefore a positive outcome for the Eurozone economy. However, strict lockdowns are affecting more of Europe than the US and the vaccine rollout is much further advanced in the US, so even with growth forecasts likely to be downgraded the US economy should prove more resilient.

The Fed and ECB have similar policies. The Fed and ECB have similar-sized balance sheets and are increasing the size of those balance sheets at roughly the same rate. At its December meeting, the ECB announced an increase of €500 billion in its pandemic emergency purchase programme to €1.85 trillion and extended it by nine months. Along with the ongoing asset purchase programme, that equates to just under €100 billion per month (equivalent to roughly $120 billion/month). Meanwhile, the Fed has an ongoing pledge to buy $120 billion of assets per month.

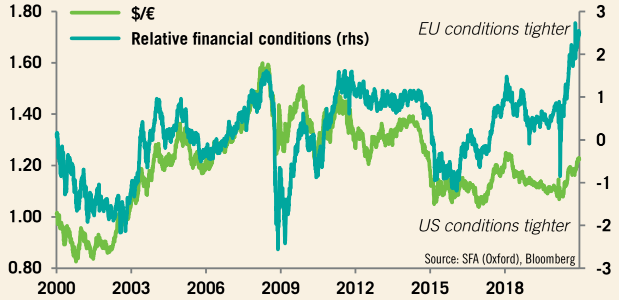
The trend to euro strength may be nearing an end. On the one hand, the technical picture favours the euro as it has risen above 1.20 and moved out of its long-term downtrend channel. On the other hand, speculative positioning in futures is extremely long the euro and short the US dollar. When the positioning is this one-sided, the trend is usually near its end and then reverses. Financial conditions in the US are now as loose as they have ever been in absolute terms and relative to financial conditions in the Eurozone, according to Goldman Sachs' financial conditions indexes. This helps to explain the weaker dollar in 2020. In the past, extremes such as this have not tended to last for long so a reversion to relatively tighter conditions in the US will strengthen the dollar.

The euro is expected to weaken against the dollar and trade between 1.10 $/€ and 1.26 $/€. In the short term, the euro could strengthen to around 1.25. However, the extremely loose financial conditions and the huge short position against the dollar that has already been built up suggest that the trend is near its end. A return to less extreme levels will favour the US dollar, with the euro weakening over the course of the year.

USD:EUR exchange rate



$/€ vs relative financial conditions



PRECIOUS METALS FORECAST – GOLD

79
Au

2020	Average: $1,777/oz	Low: $1,485/oz	High: $2,061/oz	Price change: +25%
2021 Forecast		Low: $1,760/oz	High: $2,120/oz	

Investment demand to continue to support the price

Economic uncertainty remains significant in 2021. Some political risks have receded (for example, Biden as US president, Brexit agreement) but risks to the economy have increased now that a second wave of the pandemic has hit many countries and lockdowns are being re-imposed.

Fiscal and monetary policies remain supportive. The Fed and ECB are both expanding their balance sheets at around $120 billion per month. In the US, Congress agreed a further $900 billion of support in late December. With a Democrat-controlled Congress, a more expansive fiscal policy is possible which could result in higher inflation once vaccines have been more widely administered and the economy starts to recover.

Inflation and bond market trends are favourable for gold. Inflation expectations have risen above where they were at the start of 2020. In the short term, the severity of the pandemic may mean that inflation expectations are pared back since vaccines have not arrived soon enough to avoid the current resurgence in cases. However, disruption to supply chains has resulted in rising food and other commodity prices. Base effects from the oil price collapse last year will cause a jump in inflation contributions from energy. The yield curve is steepening and real yields are negative in Europe and the US; these are also supportive of a higher gold price.

Total supply is expected to recover in 2021. Global mine production was cut by pandemic-related mine closures last year. A repeat of this is possible but is considered less likely this year, so overall primary supply is predicted to be closer to 2019 levels. Recycling flows were robust last year given the high price and economic difficulties. With a higher gold price anticipated this year and ongoing economic stresses, recycling levels could be similar to those last year.

Central banks will remain buyers in 2021 but without China or Russia the total is likely to be similar to last year. China stopped increasing its gold reserves in 2019 and Russia halted its purchases last year. That left Turkey as the only significant gold purchaser and so central bank purchases dropped considerably in 2020.

Consumer demand to recover somewhat. A combination of record price levels and economic difficulties caused by the pandemic resulted in much lower consumer demand for gold in 2020. Jewellery demand is estimated to have fallen by more than 40%. In 2021, the gold price is forecast to remain high but the economic situation should improve, particularly in the second half of the year once vaccination has become more widespread. This should enable a modest pick-up in jewellery purchases. Of the two largest markets, China was less impacted by the pandemic than India so jewellery purchases there could lead the recovery.

Investment demand is expected to continue to lift the gold price. Downside risks to growth from the pandemic mean governments and central banks are likely to continue their significant fiscal and monetary support. This should keep investors interested in gold as a safe haven. Inflation expectations have risen which, along with a steepening yield curve and negative real interest rates, are positive for gold. The gold price is expected to trade in a range between $1,760/oz and $2,120/oz.

PRECIOUS METALS FORECAST – SILVER

47
Ag

2020	Average: $20,60/oz	Low: $12,10/oz	High: $29,25/oz	Price change: +47%
2021 Forecast		Low: $21,00/oz	High: $36,00/oz	

Recovery in industrial demand, investment to drive the price

Inflation expectations have risen and silver tends to perform better than gold when inflation picks up. The Fed and ECB are expected to keep interest rates low or negative into 2023 even with a vaccine-enabled economic recovery in H2'21. This could push up inflation and make real interest rates more negative. The Fed is now targeting an average inflation level and would tolerate higher inflation before increasing interest rates which would be positive for silver.

Photovoltaic (PV) silver requirements are forecast to increase this year. A combination of projects delayed from 2020 being completed and ongoing policy support for solar power is expected to see PV installations jump by 25% to around 150 GW. China remains the largest single PV market but many other nations are increasing the number of installations and contributing to the overall growth. Even with modest thrifting, silver demand from the PV industry is likely to be more than 20% higher this year than in 2020.

Electronic and electrical silver demand should be supported by the rollout of 5G phones. Smartphone sales are expected to recover this year. 5G phone sales are predicted to grow rapidly and take an increasing share of the market as prices fall, closing the gap to 4G phones.

Global silver supply is predicted to rebound in 2021. Primary silver supply was more constrained than gold last year, with mines being temporarily shut in major producing countries such as Mexico and Peru which combined represent about 40% of global silver production. Most silver is mined as a by-product of other metals: gold, copper and lead/zinc. At these mines too, lower production caused by coronavirus-related closures should be reversed this year. However, if cases surge in those countries further mine closures are possible.

Silver is likely to outperform gold again this year, trading in a range between $21/oz and $36/oz. Silver outperformed gold last year, taking the gold:silver ratio from 84 to 71 despite the price slump in March which saw the ratio surge to 123. The gold:silver ratio is still above its long-term average of 66 so there is room for it to fall further. Industrial demand should be more robust in 2021, especially from the PV industry. ETF holdings climbed by over 40%, exceeding 1 billion ounces for the first time last year. Rising inflation expectations and negative real interest rates should keep investment demand healthy this year.

PRECIOUS METALS FORECAST – PLATINUM

78
Pt

2020	Average: **$893/oz**	Low: **$615/oz**	High: **$1,075/oz**	Price change: **+12%**
2021 Forecast		Low: **$850/oz**	High: **$1,200/oz**	

Significant investment demand needed to balance the market again

The industrial platinum market surplus is predicted to widen to more than 1.5 moz this year (ex. investment) as supply rebounds more than demand. A year without significant mine shutdowns plus additional supply from processing stockpiles could lift global refined platinum production by 1.6 moz. After coronavirus-related disruptions last year, a recovery in secondary platinum supply is also anticipated this year. Even if increases are seen in all end-uses as the world recovers from the pandemic, global demand is forecast to grow by only 1 moz. However, with lockdowns being reintroduced there is a risk that recycling and industrial demand will be lower than currently expected.

Global primary supply is estimated to exceed 6 moz. With no coronavirus-related lockdowns anticipated this year, mine supply should return to typical levels. As Anglo Platinum's Anglo Converter Plant (ACP) Phase A unit resumed operation at the end of 2020, some of the stockpiled material that built up last year will be processed, lifting refined platinum production to around 6.3 moz. This does rely on successful commissioning of the plant as the Phase B unit is undergoing maintenance and cannot be used as a back-up.

Global automotive demand is forecast to rebound by 19% in 2021. However, that still leaves demand more than 100 koz below 2019 levels. Some substitution of platinum into gasoline autocatalysts to replace palladium is anticipated this year. However, it is still early in the process of rolling out the new catalysts. A limited number of models will be utilising the new catalysts initially and so this is estimated to add around 100 koz to automotive demand. A recovering light-vehicle market should mean more diesel car sales in absolute terms in Western Europe this year, and hence higher platinum demand. However, diesel passenger cars are expected to continue to lose market share. The drop is not likely to be as large as last year which took diesel vehicles' share below 30%. Heavy-duty vehicle production also contributes modestly to the growth in platinum demand as it is projected to increase in 2021.

The economic recovery means higher jewellery demand is anticipated this year. Platinum is still cheap compared to gold and that makes platinum jewellery look relatively good value. However, platinum jewellery is still a luxury item and while the economic recovery is expected to lift sales, demand is likely to fall well short of 2019 levels.

Industrial demand is set to recover strongly in 2021 and exceed the 2019 level. Most industrial end-uses are projected to increase their platinum requirements this year. The largest contributor is the petroleum industry which is forecast to bounce back strongly with a resumption of oil-refining capacity expansions. However, there is a risk of further refinery closures in Europe, Japan and the US if operating margins remain under pressure. There has been a great deal of positive news regarding developments in the hydrogen economy over the past year. However, despite rapid growth, the amount of platinum used in electrolysers and fuel cells is estimated to be less than 100 koz.

Record investment demand will be needed to balance the market in 2021. Globally, ETF holdings gained 496 koz last year after expanding by a record 995 koz in 2019. Including coins and bars, total investment demand was around 920 koz and absorbed most of the industrial surplus. However, with a higher platinum price predicted this year, coin and bar purchases in Japan may not be as high as in 2020.

The platinum price is forecast to trade between $850/oz and $1,200/oz. Despite supply growth outpacing gains in industrial demand, investors could once again pick up the slack. Platinum still looks good value compared to gold or palladium. The platinum price's wide discounts to gold and palladium have narrowed somewhat but remain historically large. The long-term real average platinum price is around $1,000/oz, so the metal is fairly priced at current levels. The development of the hydrogen economy and the roll-out of gasoline catalysts containing more platinum may keep longer-term investors interested. A downside price risk is a weaker ZAR/USD exchange rate. Rand strength has helped to support the platinum price but as the number of coronavirus cases climbs and the economic situation deteriorates, the rand could weaken and drag down the platinum price.

46
Pd

2020	Average: $2,214/oz	Low: $1,625/oz	High: $2,780/oz	Price change: +23%
2021 Forecast		Low: $1,900/oz	High: $2,900/oz	

Market close to balance

The palladium market is expected to be in deficit in 2021. However, the gap between supply and demand is forecast to narrow to less than 100 koz as both primary and secondary supply recovers from 2020's interruptions. Those gains are expected to outpace the recovery in demand from the auto sector. In the near term, scrap autocatalyst collection and recycling could be interrupted by the lockdowns but slower economic activity could also curb demand.

Global primary palladium supply is forecast to expand by around 20% this year, comfortably taking it above 2019's level. The recovery in South African supply will be boosted by some of Anglo Platinum's pipeline stock being refined now that the ACP Phase A unit is operational. The lockdown in South Africa temporarily closed many mines last year but even with the current rise in Covid-19 cases, the government is not expected to shut down the mines. Russian supply is estimated to grow modestly following the completion of maintenance work at processing operations last year. In North America, palladium yield is set to increase at the Stillwater mine as is by-product output from Canadian nickel mines.

Secondary supply is predicted to rebound as palladium recovered from autocatalysts, waste electrical and electronic equipment (WEEE) and jewellery increases. The autocatalyst recycling industry is expected to normalise further following the disruption of lockdowns in H1'20, with recycled palladium returning to its growth trend. However, the reinstated lockdowns in parts of Europe and the US risk slowing that process and pushing the recovery into the second half of the year.

Automotive demand is projected to exceed 2019 levels owing to a combination of a strong recovery in light-vehicle sales and some further increases in loadings. Light-vehicle sales in China have seen the strongest recovery and could exceed 2019 sales this year, but that is not expected to be the case in Europe or North America. The full implementation of China 6a emissions standards was delayed until the beginning of this year and will lift loadings. This year it is anticipated that the first gasoline autocatalysts with substitution of platinum to replace some palladium will be used in some North American vehicles, which will slightly dent automotive demand.

Palladium industrial demand is estimated to be marginally higher in 2021 following a sharp drop in 2020. Dental demand is predicted to pick up owing to procedures delayed by the pandemic being undertaken and a gradual return to normality as vaccines are rolled out. Demand from the petroleum industry is also expected to expand modestly, whereas requirements in the chemical and electrical sectors are likely to be lower year-on-year.

The market is predicted to be much closer to balance this year than last year. ETF holdings fell by 115 koz last year and a repeat of that this year could push the market into surplus. ETFs still contain 500 koz. In the short term, the price could remain elevated but it is expected to pull back over the second half of 2021 as refined metal availability is boosted by the processing of stockpiled material in South Africa. This year, the palladium price is forecast to trade between $1,900/oz and $2,900/oz.

PRECIOUS METALS FORECAST – RHODIUM

45
Rh

2020	Average: **$11,621/oz**	Low: **$5,950/oz**	High: **$17,350/oz**	Price change: **+181%**
2021 Forecast		Low: **$15,000/oz**	High: **$25,000/oz**	

Deficit market for rhodium as emissions standards tighten

Automotive rhodium demand could exceed 1 moz for the first time this year, owing to the rebound in light-vehicle sales and the ongoing tightening of emissions standards. Globally, light-vehicle sales are projected to jump by around 8 million units this year. China is leading the recovery with sales expected to be slightly higher than in 2019. With China 6a emissions standards being applied countrywide from the beginning of the year, catalyst loadings will also be higher. In addition, real world driving emissions test limits are tightening in Europe.

Industrial demand revives with the global economy but is likely to remain below 2019 levels. The recovery is mainly driven by China and other emerging markets. The high rhodium price has already resulted in thrifting in the glass industry, but expansions in plant capacity are expected to lift rhodium requirements this year. Chemical and other end-uses are also set to see a modest increase in demand.

Refined rhodium output is projected to return to 2019 levels. South African mine output has recovered from the lockdown in the first half of last year. Refined production from South Africa will be boosted owing to the restart of Anglo's ACP and the processing of stockpiled material. Any unplanned disruptions at the ACP Phase A unit are a risk to supply since there is no back-up because the Phase B unit is still being repaired. Secondary supply is expected to grow this year as the number of scrapped vehicles rises, lifting autocatalyst recycling.

The rhodium price ended 2020 at record levels. The market remains in deficit, but metal availability is expected to improve as Anglo's refined output returns to normal and stockpiled material is processed. Rhodium ETFs shrank by 9 koz last year, providing a small amount of metal to the market, but that leaves just 15 koz. It takes longer for rhodium to be recovered than platinum or palladium so the market is likely to remain tight in Q1'21. If there are any problems with the ACP then price volatility could increase. The price is forecast to range between $15,000/oz and $25,000/oz.

PRECIOUS METALS FORECAST – RUTHENIUM

44
Ru

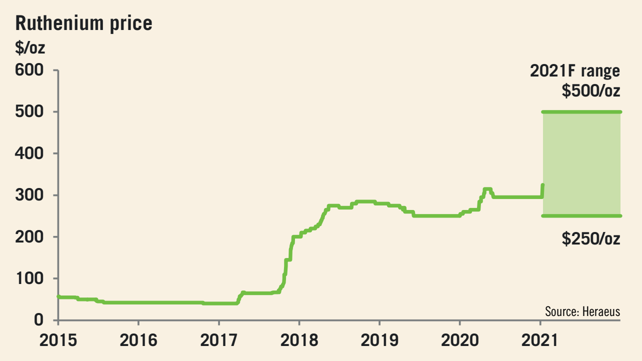
2020	Average: $288/oz	Low: $250/oz	High: $315/oz	Price change: +18%
2021 Forecast		Low: $250/oz	High: $500/oz	

Supply recovery moves the market into temporary surplus

Ruthenium demand is expected to be stronger in 2021. Electrical and chemical demand are forecast to improve modestly as the economy recovers. There are now competing hard disk drive (HDD) technologies, some of which do not use ruthenium, so HDD demand is likely to be flat at best, but other electrical requirements are expected to be slightly higher this year. Electrochemical usage was disrupted last year but with a return to economic growth, a stronger level of demand is anticipated this year. Demand for ballast water treatment electrodes is supported by legislation.

Ruthenium supply is forecast to rebound sharply this year. Last year, a lockdown in South Africa closed many mines for a few weeks in H1 and production levels were constrained for some time after the mines were reopened. South Africa accounts for about 90% of global ruthenium production. Although most mines were close to normal operating levels at the end of 2020, mine supply of ruthenium this year is expected to fall short of 2019 levels. However, refined output could match 2019 as stocks that were built up while Anglo's ACP units were out of operation are processed. A slight improvement in Russian and North American production is also anticipated.

The market is estimated to move into a temporary surplus this year as a recovery in supply from South Africa is boosted by the processing of stocks. Ruthenium has not followed iridium and rhodium prices higher but that remains possible while refined output is constrained. The price is forecast to range between $250/oz and $500/oz.



PRECIOUS METALS FORECAST – IRIDIUM

77
Ir

2020	Average: $1,651/oz	Low: $1,500/oz	High: $3,050/oz	Price change: +103%
2021 Forecast		Low: $2,000/oz	High: $5,000/oz	

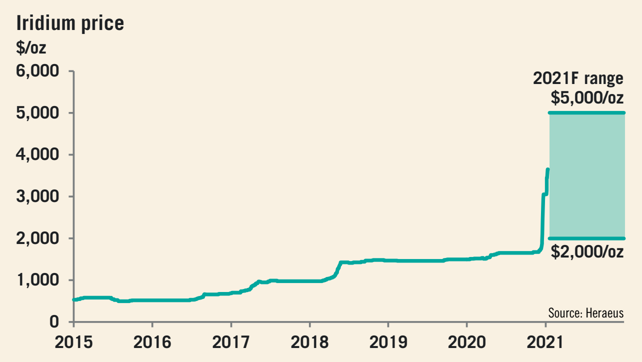
Improving supply should see the price ease later in the year

The market is forecast to have a modest surplus this year as supply recovers more strongly than demand. Mine output in South Africa is expected to be at normal levels this year, while refined output should be boosted by the processing of stocks built up while Anglo's ACP was being repaired. South Africa provides 80% of global iridium supply. Production from North America and Russia is set to grow slightly this year.

Strong demand is anticipated as several sectors of the electrical market return to growth as the 5G network is rolled out. More widespread adoption of 5G phones should help smartphone sales return to growth this year, supporting capacity expansion for lithium tantalate production using iridium crucibles. Early estimates suggest 5G phone sales could come close to doubling this year. Electrochemical demand is projected to recover as economic growth picks up and improves the outlook for end-use sectors.

Use of notable quantities of iridium in electrolysers is some years away. While there have been many positive announcements regarding the hydrogen economy over the past year, it is still very early in its development. At this point, only a small amount of iridium is used in electrolysers annually. This has the potential to become more meaningful as the hydrogen economy expands.

Near term, the market is illiquid but this is expected to be temporary. The iridium price reached a record $3,050/oz at the end of 2020 as supply was limited. Iridium is the smallest PGM market and is thus susceptible to rapid price rises if liquidity dries up. Anglo's ACP Phase A unit is now operating but iridium has a long processing time so refined supply could be constrained during Q1'21, keeping the price elevated in the near term. The price is forecast to trade between $2,000/oz and $5,000/oz.



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