The ruthenium market is predicted to be close to balance by the end of the year. In H1’20, end-user stocks were likely to have been drawn down as a result of disruption to South African mine supply, which has temporarily pushed the market into deficit. Once supply returns, the market is forecast to equilibrate. However, with robust demand anticipated from 2021, firmer prices could be expected.

There is growing demand for high-purity ruthenium targets used in hard disks. Ruthenium is used in hard-disk drives (HDDs) to help orientate the magnetic grains and reduce the interference between layers of the hard disk. In June 2018, Furuya Metal announced an investment to expand the ruthenium refining capability of its Tsuchiura Plant in Japan in response to rising demand for high-purity ruthenium in hard disks. Furuya planned to boost capacity to approximately 60 t per year by December 2019, an almost 50% increase.

With the rapid expansion of data centres worldwide, the number of hard disks in a drive continues to grow. Demand for storage is being driven by growth in cloud storage, heightened this year owing to the millions of people working remotely. The use of ruthenium means that each magnetic domain occupies a smaller area of the disk surface, delivering higher areal densities than hard disks containing base metals.

Ruthenium is also considered a key material for the next-generation semiconductor memory known as spin-transfer torque magneto-resistive random-access memory (STT-MRAM). Furuya cited STT-MRAM demand taking off from 2020 as one of the drivers behind its ruthenium refining capacity expansion. Requirements for semiconductor memory are being driven by emerging technologies such as artificial intelligence and autonomous vehicles.

Despite declining HDD shipments, capacity per drive is expected to grow at an increasing rate from 2020, supporting ruthenium usage. Demand for solid-disk drives (SDDs), which do not contain ruthenium, is also estimated to increase, but HDDs are likely to retain a significant cost advantage ($/GB) for high-volume data storage for the foreseeable future which will sustain demand. The electrical sector, including HDDs, semiconductor memory, chip resistors and other components, is the largest end-user of ruthenium, accounting for 35% of consumption in 2019 (344 koz).
The silver price followed gold’s ascent last week and managed to outperform, reaching $19/oz for the first time since September. It then fell back but closed the week up 3.5%. However, due to its industrial exposure, the market remains vulnerable to the impact of further lockdowns.

Industrial silver consumption, which includes ethylene oxide (EO) as well as photovoltaic and electrical uses, is expected to drop significantly this year. Silver catalysts used in the manufacture of EO accounted for 5.4 moz of silver in 2018. Silver is only partially consumed in the process, and is recycled every 18-36 months, thus generating only modest top-up demand. As a result, demand for silver is more dependent on new EO capacity builds, but the rate of expansion is estimated to slow this year owing to the impact of COVID-19, i.e. fewer new catalysts will be required.
India’s auto forecast slashed by almost half for 2020. India’s car industry is one of the worst affected among the world’s leading markets owing to the impact of a strict national lockdown, with a 49% decline in light-vehicle sales predicted this year, compared to the pre-pandemic outlook (source: LMC Automotive), to 1.74 million units. This far exceeds even the worst case scenarios for the US, China or Europe. Additionally, India’s recovery is likely to be much more drawn out. The country’s bleak outlook has resulted in downward revisions to PGM autocatalyst demand, including around 25 koz of palladium (-9% year-on-year).

The palladium price made a run at $2,000/oz last week, but is still trading roughly sideways. The price is vulnerable to slipping further as the market is now expected to be close to balance this year.

Environmental legislation will sustain electrochemical demand for iridium and ruthenium. Owing to stronger demand in line with increasingly stringent environmental regulations, Industrie De Nora has launched a standalone company to expand its water treatment portfolio. Iridium and ruthenium are used as electrode coatings across a variety of industries, including swimming pool chlorination, ship ballast water treatment and marine sewage treatment. Electrochemical uses such as these account for around 18% of ruthenium consumption and 26% of iridium.

Despite strong momentum in other precious metals this week, the rhodium, ruthenium and iridium prices remained unchanged. As off-exchange metals, they are less reactive to sudden changes in the market.
Central bank gold demand

Gold price

The gold price pushed through $1,800/oz last week, for the first time since 2011

Industrial silver demand

India passenger vehicle sales

Source: World Gold Council, IMF

Source: SFA (Oxford), Bloomberg

Source: The Silver Institute

Source: SFA (Oxford), FADA

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