

PRECIOUS APPRAISAL

No. 8
14th March 2022



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MARKET SPOTLIGHT

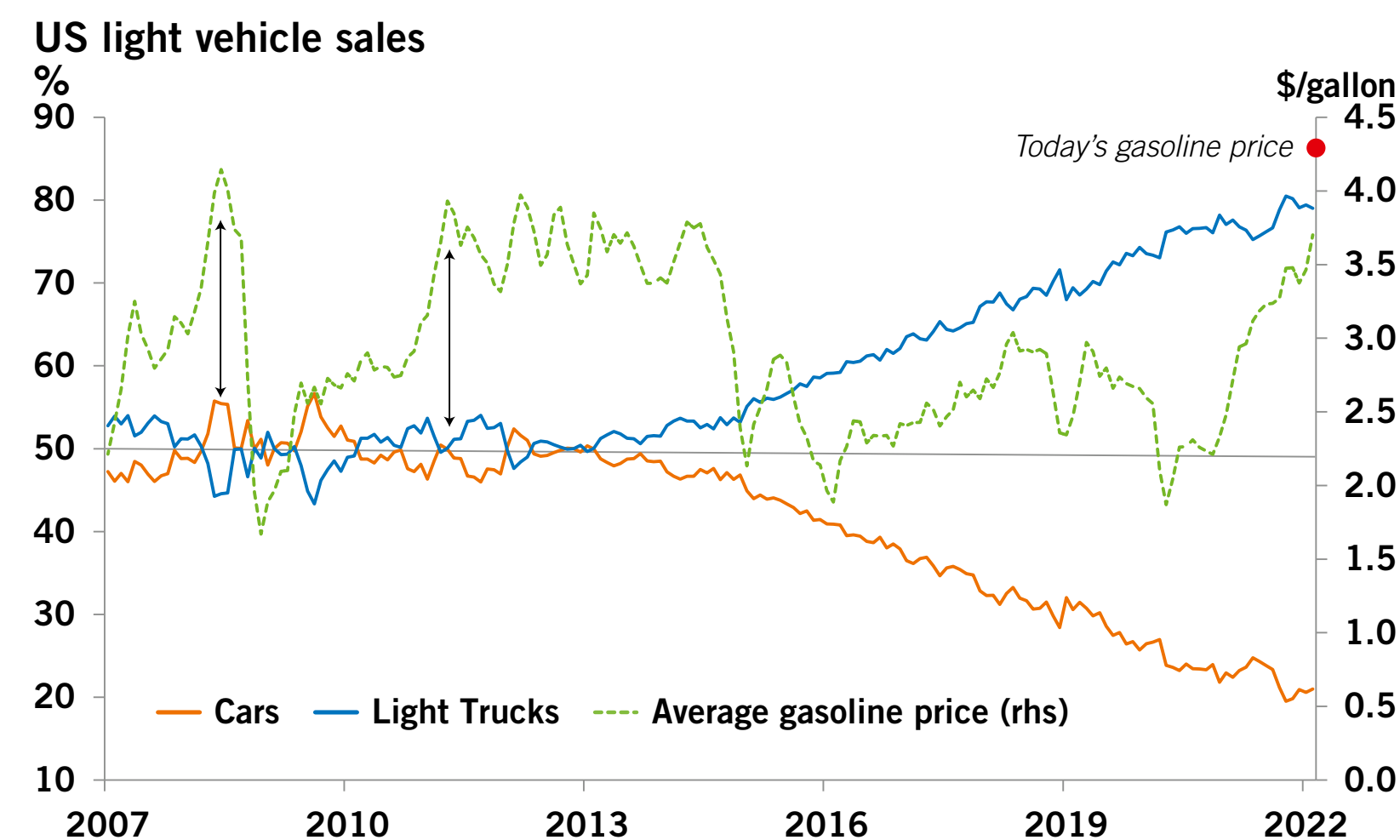
Will high US gas prices push people into BEVs and impact PGMs?

The conflict in Ukraine has resulted in a sharp increase in oil prices. Crude oil is trading well above \$100/barrel, having exceeded \$120/b and reached the highest level since 2008. The US government has banned imports of Russian oil. As a result, the US is seeing the highest gasoline prices since 2008, as the national average price has breached \$4/gallon.

In the past, high US gasoline prices have resulted in a shift in purchases from trucks to cars. US light-vehicle (LV) sales show a swing away from light trucks (pickups, SUVs, minivans) towards smaller, more fuel-efficient autos from 2008 to 2013, when gasoline prices were high. However, cars and light truck sales in the US were relatively balanced then. Now, the market is heavily in light trucks' favour with a 79% share, as SUV sales have taken off. The semiconductor chip shortage and resulting lack of dealer inventory could make the shift to cars difficult.

However, high gasoline prices could encourage more people to consider an EV. The West Coast has the highest average gasoline prices at \$4.45/gallon, 72¢ higher than the US average, but all regions are seeing sharply higher prices. California already has the greatest market penetration of BEV sales in the US (9.5%), owing to legislation and the most expensive gasoline, and accounts for 12.5% (1.85 m units) of all US LV sales (source: California New Car Dealers Association). For the country as a whole, BEV sales more than doubled last year to half-a-million for a 4% share, but this lags both Europe and China. BEV production has been much less impacted by the chip shortage than regular LVs, but availability is an issue. Electric pickups should be a viable option for the truck-dominated market, but models have been subject to multiple delays, with few available. At the earliest, the electric version of Ford's best-selling F150, the Lightning, will begin deliveries by the end of 2022. There are, however, several electric SUVs to choose from and more are being launched this year.

Fewer gasoline auto sales would be a loss for palladium, and rhodium, demand. The US is the second-largest LV market with autocatalyst demand of 1.7 moz of palladium and 200 koz of rhodium. With Russia being the largest palladium producer (2.7 moz), worries about metal availability have propelled the palladium price to record highs. The outcome of the electric vs. non-electric car battle will become clearer once vehicle availability is no longer constrained. However, over time the shift to BEVs could dampen both palladium demand and prices.



Source: SFA (Oxford), US DOE, Bloomberg

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PRECIOUS METALS REVIEW

Gold



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	1,986	1.16%	2,070	08/03/2022	1,959	11/03/2022
€/oz	1,816	0.91%	1,902	08/03/2022	1,780	11/03/2022

Inflation is likely to be higher for longer. January saw the highest year-on-year inflation since 1991 across all OECD member countries, with an average CPI increase of 7.2%. The primary driver for this increase has been energy prices. The US and Germany saw year-on-year energy price rises of 27% and 21%, respectively, earlier in the year. The latter does not consider the more recent impacts of the Russia-Ukraine conflict and the EU's plan to reduce reliance on Russian energy exports. Other inflationary pressures caused by the conflict are related to food prices, as both countries are major wheat exporters.

The Federal Reserve is poised to start combating the highest inflation rate in 40 years. The US CPI was 7.9% year-on-year in February, the highest since January 1982. However, just one 25 basis point interest rate rise is expected as the outcome from the Fed's meeting next week. This was all but confirmed in Jay Powell's testimony to Congress. This lack of action is pushing real interest rates even lower, which is a positive environment for gold.

Gold traded above \$2,000/oz last week for the first time since August 2020 as investors moved into the safe haven. More than 1.1 moz of the yellow metal was added to US gold-backed ETFs last week.

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PRECIOUS METALS REVIEW

Silver



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	25.97	1.59%	26.94	08/03/2022	25.29	07/03/2022
€/oz	23.75	1.37%	24.75	08/03/2022	22.90	10/03/2022

Photovoltaic demand for silver may be over-estimated for the next decade. The low interest rates that have been prevalent since the financial crash of 2008, combined with low carbon costs and government subsidies, have resulted in projects to increase renewables capacity being economically incentivised. However, the transition from subsidies to carbon pricing, combined with interest rates returning to more normal levels, could decrease renewables’ competitiveness. The Potsdam Institute for Climate Impact Research and ETH Zurich calculate that this could result in 482 GW less renewable capacity being installed by 2030 in Europe compared to the outcome if the current situation continued (610 GW vs. 1,092 GW). Photovoltaic capacity accounts for approximately 237 GW of that reduction. That equates to an estimated reduction in silver demand for photovoltaics of 150 moz cumulatively between 2022 and 2030, assuming some further modest thrifting. Photovoltaic silver demand is estimated to have been around 120 moz last year, roughly 9% of total demand.

Silver American Eagle sales slumped in February. In January, sales of the 1 oz silver coin were 5.0 moz, the highest level since 2017, but in February they dropped to 1.5 moz. January tends to be a strong month for sales as it coincides with the new mintage being released. At 77.45, the gold:silver ratio is still above its long-term average as the price pulls back slightly from recent highs of \$26.94/oz.

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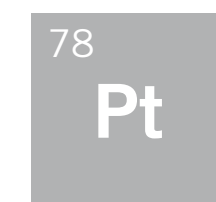
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Platinum



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	1,080	-2.59%	1,183	08/03/2022	1,054	11/03/2022
€/oz	988	-2.78%	1,087	08/03/2022	958	11/03/2022

Royal Bafokeng Platinum has announced record production. RBP's results reveal record production for 2021, with total metal-in-concentrate output of 467 koz (4E). That is an 11.5% increase year-on-year, yielding 301 koz of platinum in concentrate. This was 2% below the bottom of its guidance owing to the slow restart of operations in H2'21 following the second wave of Covid in South Africa and unreliable power supply from Eskom. Guidance for 2022 is projecting a rise to between 485 koz and 505 koz 4E metal in concentrate. Platinum production will increase overall, to approximately 315 koz, but the higher output is partially offset by a 5.4% reduction in platinum content in material mined from the BRPM South shaft which is switching to the lower grade UG2 orebody. South African production growth is projected to slip slightly to 4.6 moz in 2022 as the majority of the backlog of work-in-progress material from Anglo Platinum was processed in 2021.

The platinum price reached its highest level since June last week, but ultimately gave back all of its gains from the high of \$1,183/oz and closed down on the week.

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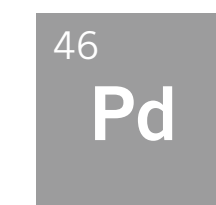
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Palladium



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	2,807	-4.20%	3,442	07/03/2022	2,713	11/03/2022
€/oz	2,568	-4.36%	3,160	07/03/2022	2,463	11/03/2022

Palladium lease rates are on the rise as supply concerns continue. Lease rates for palladium last week hit double digits – the highest since March 2020, when rates jumped owing to a lack of liquidity after the pandemic resulted in South African mines being shut and flights grounded. Although sanctions have not been applied to Nor nickel or PGMs, end-users are taking action to ensure they have access to the metal they need.

More supply chain problems for automakers. Neon has been added to the list of items disrupted by the war in Ukraine. It is used in lasers that make semiconductor chips, adding another twist to the automakers' supply problems. In addition, high energy prices mean higher transportation costs which in turn feed into higher prices for food and other goods. This can reduce consumer spending, causing a slowdown in economic growth, if not a recession. That also puts the level of car sales, which are supposed to recover quite strongly this year as chip supply improves, as well as their availability, into question.

The palladium price hit a new record of \$3,442/oz last Monday, but then retreated. With the palladium market close to balance, even relatively small shifts in the supply or demand outlook can result in volatile price moves.

PRECIOUS METALS REVIEW

Rhodium, Ruthenium, Iridium



	RHODIUM	RUTHENIUM	IRIDIUM
Reporting Week	\$19,950/oz	\$695/oz	\$5,950/oz
Previous Week	\$22,650/oz	\$585/oz	\$5,350/oz

Rhodium output from RBP should increase in 2022. The company’s BRPM South shaft is transitioning its production to 100% from the UG2 Reef this year. The UG2 ore will contribute 58% of BRPM’s total output for 2022. The UG2 orebody has a lower combined PGM grade than the Merensky Reef in the BRPM shafts, resulting in a slight reduction in grade for BRPM. However, the proportions of metals in the UG2 Reef also differ from the Merensky Reef. The UG2 reserves’ rhodium grade is 2.5x the grade of rhodium in the Merensky material. The higher rhodium content in the UG2 ore along with the Styldrift shaft finishing ramp-up and reaching steady-state production will lead to a modest increase in output. This year, overall South African refined rhodium production is predicted to dip to around 630 koz, owing to the boost received in 2021 from processing stockpiled material.

The rhodium price climbed to \$23,450/oz last Monday but then fell back to \$19,950/oz. The ruthenium and iridium prices also increased last week, reaching \$695/oz and \$5,950/oz, respectively.

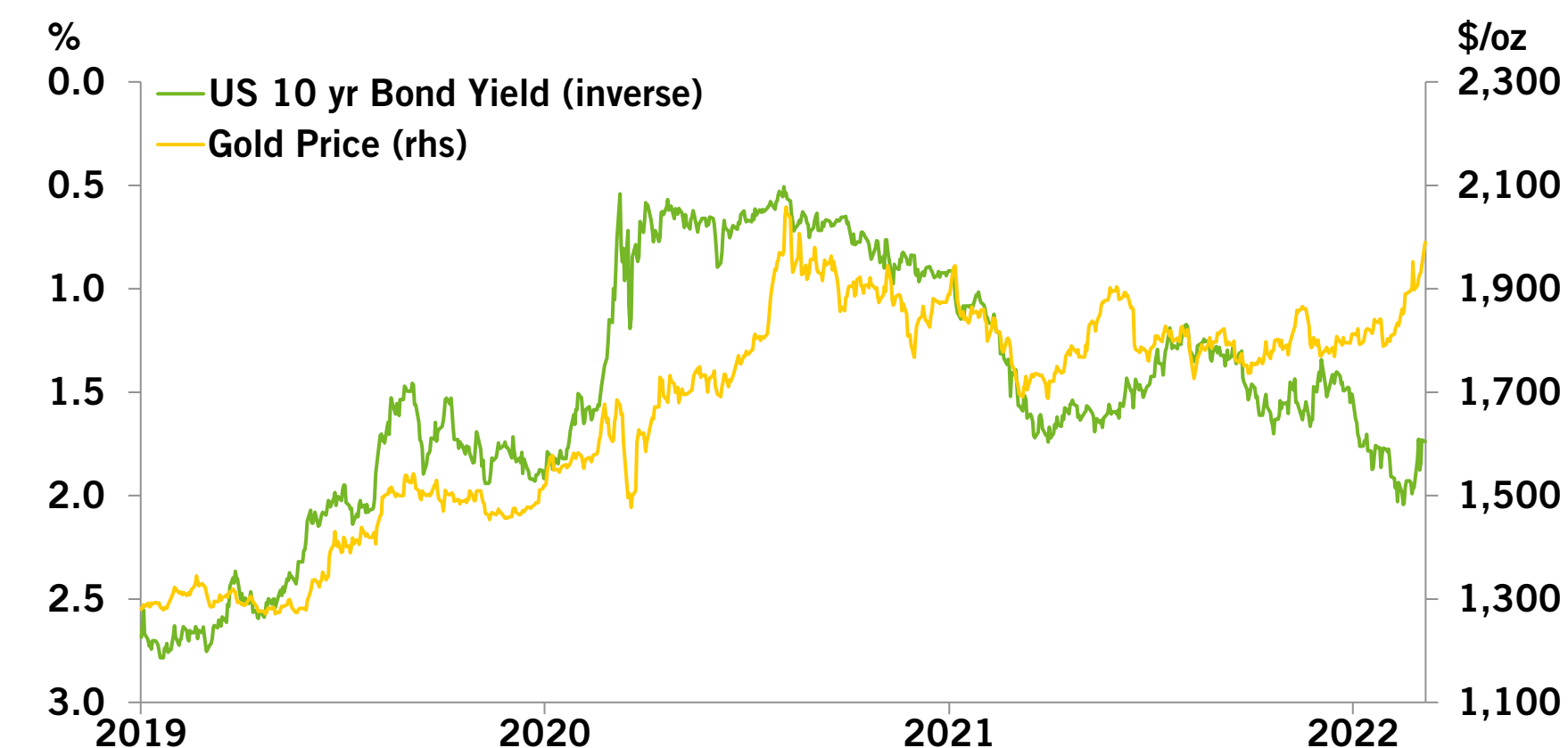
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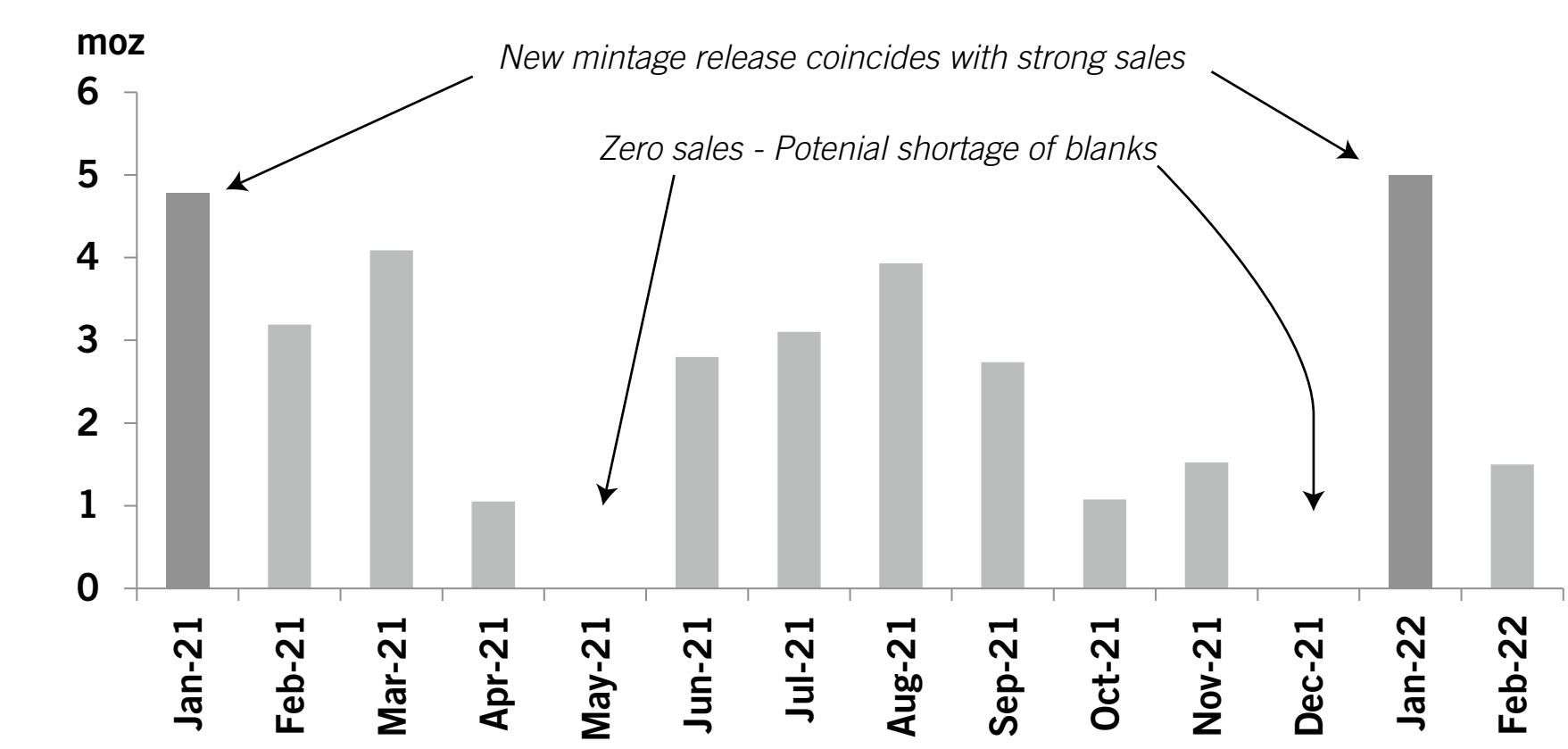
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Gold price vs US bond yield



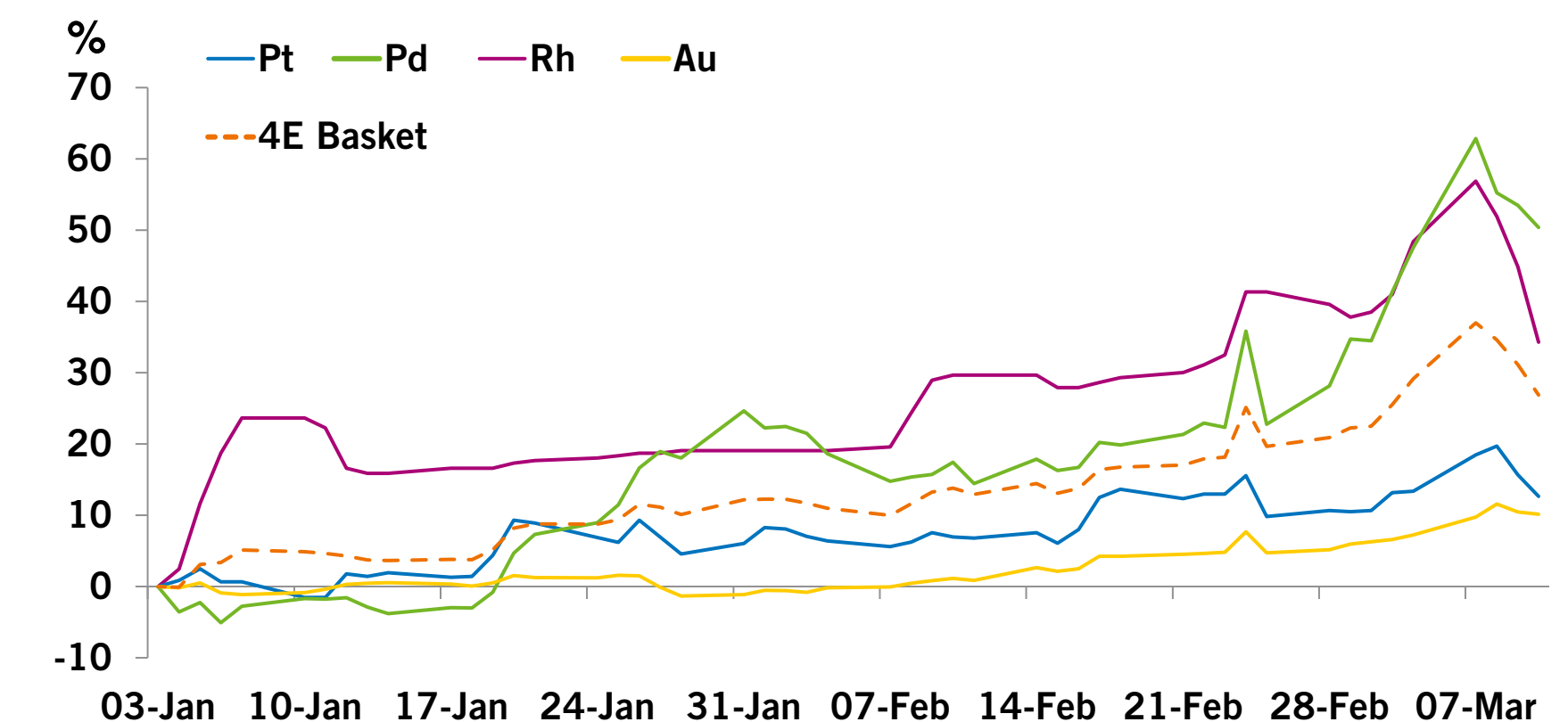
Source: SFA (Oxford), Bloomberg

US Mint American Eagle silver coin sales



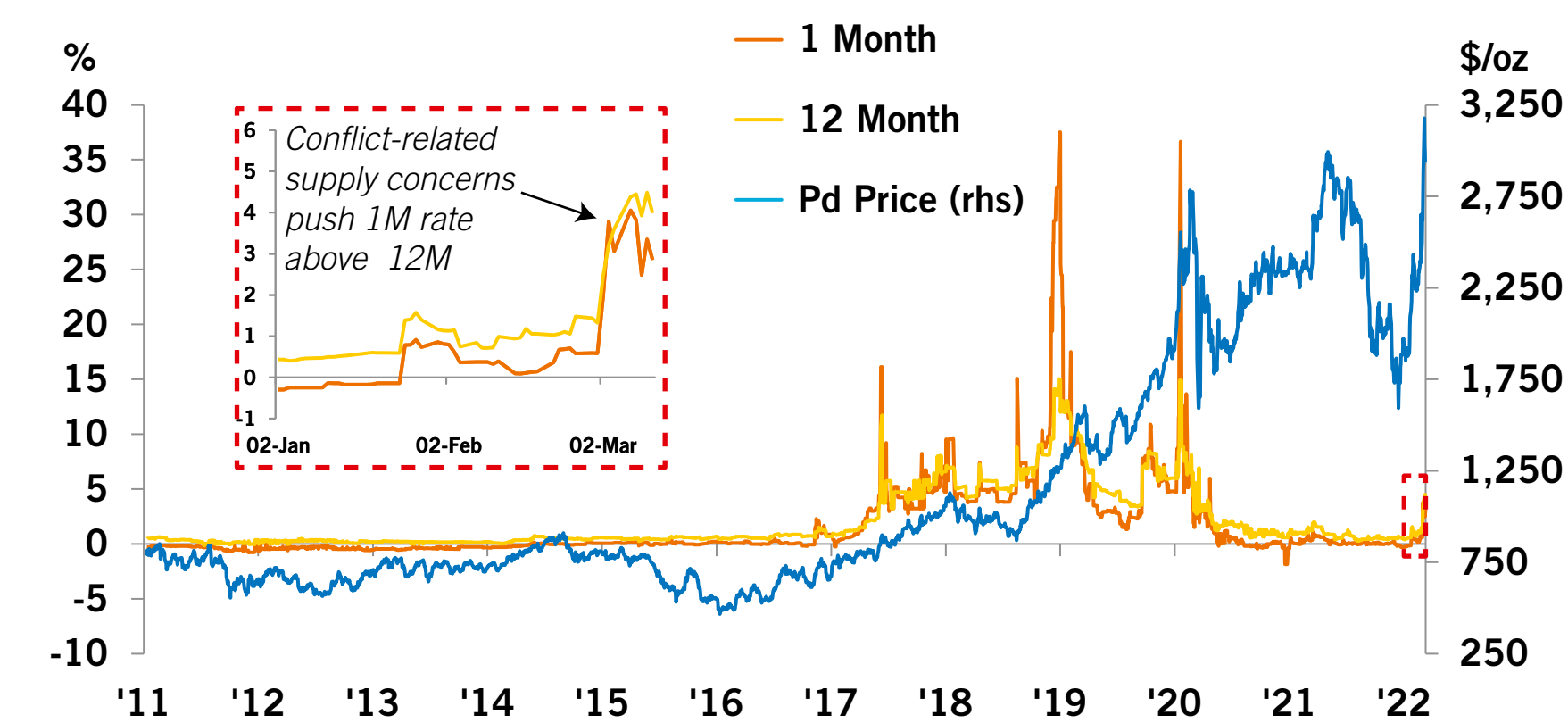
Source: SFA (Oxford), US Mint

Four-element PGM basket performance YTD



Source: SFA (Oxford), Bloomberg

Palladium price vs lease rate indicator



Source: SFA (Oxford), Bloomberg

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