

PRECIOUS APPRAISAL

No. 26
15th August 2022



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MARKET SPOTLIGHT

How do precious metals fare in recessions?

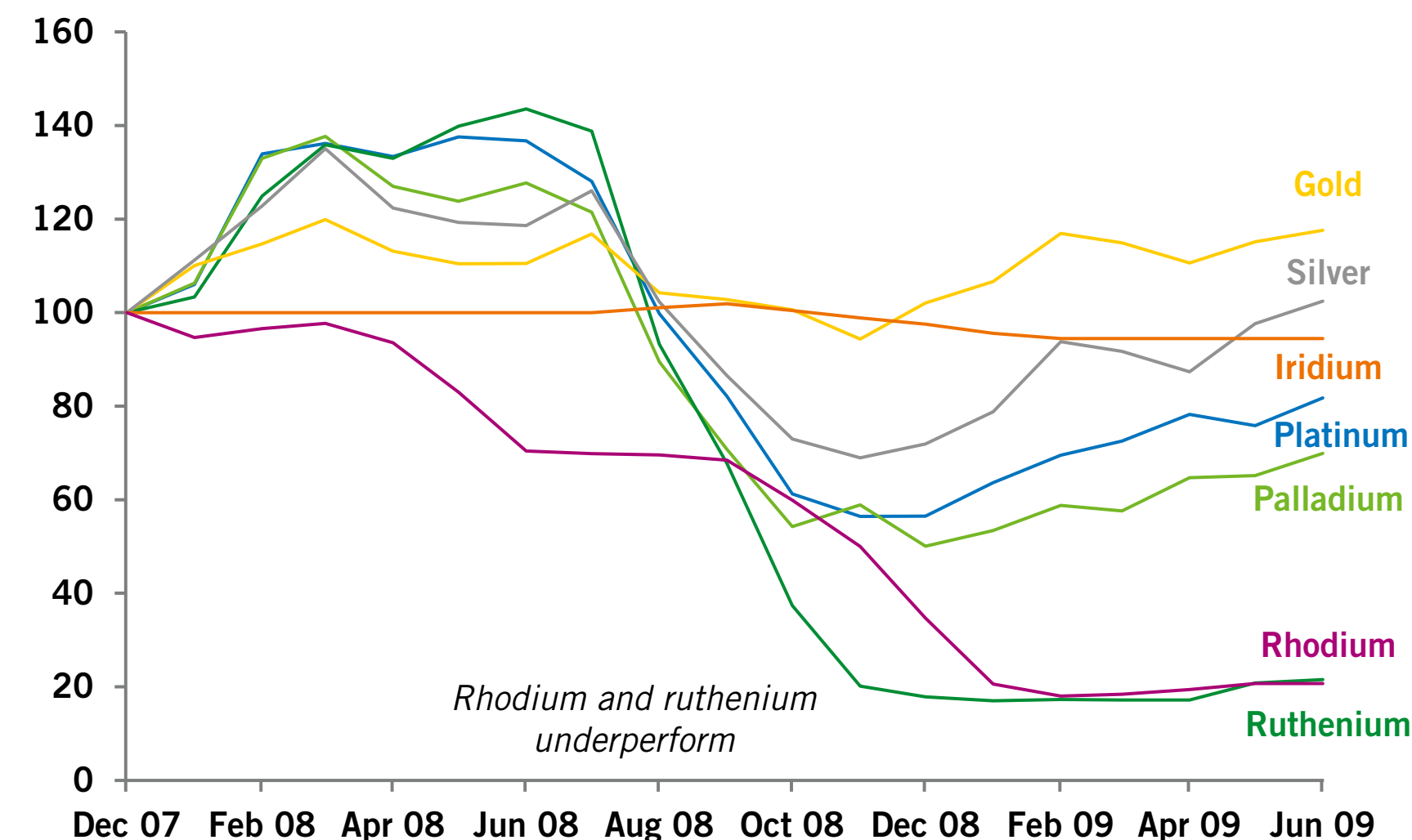
A recession is not necessarily bad news for gold. Typically, precious metal prices decline during recessions, including gold. In the 1980 recession, the gold price did decline (by 6%) but that was partly because it had just reached a record price at the start of 1980 and the Fed had finally pushed interest rates above inflation. However, in subsequent recessions the gold price has fallen less and recovered more quickly than the other metals. The gold price tends to be slightly higher at the end of a recession than at the start.

Other precious metals perform less well. In the 2007-2009 recession, precious metal prices peaked after the recession had started and hit the low points before the recession ended. Rhodium and palladium being exposed to falling automotive demand fared poorly, as did ruthenium. The fact that the metal prices were rising in the first few months of the recession is indicative of the difficulty of working out in real time when a recession has started. Economic data is a lagging indicator, which is also revised over time as more information becomes available, and recessions are typically recognised many months after they have started.

The US may already be in recession. Despite US GDP contracting for two consecutive quarters in the first half of 2022, which is considered a technical recession, economic forecasters are not predicting a recession in the US owing to the resilience of the employment figures. However, other indicators are less positive. The US Treasury yield curve has inverted which has been a reliable predictor of previous recessions. Oil price shocks have also led to recessions in the past. A strong jobs report for July was taken as a sign that the economy is robust, and with high inflation the Fed will likely continue to raise interest rates. However, more often than not the Fed raises rates ahead of a recession.

There are downside risks to prices if a recession has started or starts soon. Ruthenium, iridium, palladium and rhodium have all been at or near record prices in the last 18 months owing to supply disruptions, first in South Africa and then in Russia. Although the prices have fallen some way from their peaks, they are still significantly elevated compared to historical levels and so could see further declines. Silver is also exposed as it is a partly industrial metal and platinum prices would most likely turn lower with the other metals.

Metal prices 2007-2009 recession
Indexed to December 2007



Source: SFA (Oxford), Bloomberg

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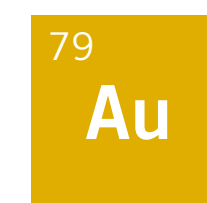
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PRECIOUS METALS REVIEW

Gold



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	1,795	1.20%	1,808	10/08/2022	1,773	08/08/2022
€/oz	1,750	0.36%	1,759	09/08/2022	1,730	11/08/2022

Gold sees some upside as the dollar weakens. The non-farm payrolls jobs report on Friday 5 August showed a bigger gain in employment than expected. However, the US CPI came in at 8.5% for July, down from 9.1% in June, and slightly lower than expected. Core CPI was also unchanged at 5.9%; expectations were for 6.1%. After the jobs report the market was pricing in a higher chance of a 75 bp rate hike in September, but now that inflation appears to have peaked the market view is that a 50 bp rise is more likely. The US dollar weakened, and gold rallied following the CPI data release. A slowdown in the Fed's tightening could result in further weakness in the dollar which would help to support the gold price. However, with the Fed funds rate at 2.5% and inflation at 8.5% the rate is still so far below inflation that the Fed will have to keep hiking. Although real rates remain negative, further Fed hikes could support the dollar to the detriment of gold in the near term.

More central bank gold purchases likely in H2'22. The Bank of Ghana plans to start purchasing gold from domestic producers in September to support the country's foreign exchange reserves, according to Ghana's vice president. Ghana produces around 5 moz p.a. of gold but the amount the central bank might purchase was not disclosed.

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Silver



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	20.53	3.38%	20.84	10/08/2022	19.99	08/08/2022
€/oz	20.02	2.52%	20.33	09/08/2022	19.61	11/08/2022

Silver miners in Latin America are seeing output recover from Covid-19 impacts. Pan American Silver, a major primary silver producer with operations in several Latin American countries, has noted its silver production will be at the lower end of guidance, around 19 moz and similar to 2021. The first quarter of 2022 was impacted by Covid reducing employee attendance, but the second quarter saw an improvement and production for the half year was 9.2 moz. The company's flagship mine, La Colorada in Mexico, ramped up production in Q2, which is making up for some falls in output at other operations as lower-grade areas are mined.

Silver has been outperforming gold for the last month. When the silver price hit its low in mid-July, when it briefly touched \$18.00/oz, the gold:silver ratio exceeded 93, but it has now fallen back to 87. If dollar strength continues to ease, then the rally can continue and silver could maintain its outperformance of gold.

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Platinum

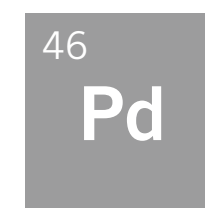
⁷⁸ Pt	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	959	2.35%	976	11/08/2022	930	08/08/2022
€/oz	935	-0.18%	942	11/08/2022	909	10/08/2022

Multiple issues have constrained platinum production in South Africa so far this year. Impala Platinum has had to contend with extended safety stoppages, intermittent industrial action and power supply interruptions in South Africa, as well as ongoing supply chain constraints which have impacted Impala Canada's output. Refined production for the year to the end of June fell by 5.6% to 3.09 moz 6E (platinum, palladium, rhodium, iridium, ruthenium and gold) (~1.4 moz Pt) from 3.27 moz in the prior period. Refined output (including Impala Canada) was impacted by lower concentrate production and the extended maintenance of a smelter at Impala Rustenburg. Sales of refined metal were 3.15 moz 6E owing to some destocking of refined inventory. With smelter maintenance completed and a wage deal in place, the second half of the year should see more stable production. Eskom's situation has improved and load-shedding has been suspended for the time being, but a return remains possible as many plants require maintenance. South African platinum production is predicted to be around 4.4 moz this year, similar to the output in 2019.

Dollar weakness helps the platinum price rally. A weakening dollar has seen the rand strengthen to nearly 16:1US\$ from more than 17:1US\$ just one month ago, and that has helped to support the platinum price. If the rand continues to appreciate then platinum could get back to \$1,000/oz.

PRECIOUS METALS REVIEW

Palladium



	CLOSE	WEEKLY CHANGE	HIGH	DATE	LOW	DATE
\$/oz	2,258	6.04%	2,316	11/08/2022	2,130	08/08/2022
€/oz	2,201	5.13%	2,235	11/08/2022	2,094	08/08/2022

Challenges in the US have hit palladium production this year. Sibanye-Stillwater has announced an updated mine production plan following operational setbacks, Covid and staffing issues and the recent flooding event. Production guidance for this year has been revised down to 445-460 koz 2E from 550-580 koz 2E (~342-354 koz Pd from 424-447 koz). In 2021, output was 468 koz of palladium (597 koz 2E) so the original guidance was for slightly lower production. Following the flooding incident, the seven-week suspension of Stillwater mine, which accounts for ~60% of mine production, resulted in roughly 60 koz 2E of lost production (~44 koz Pd). There are anticipated losses of ~20 koz 2E from East Boulder owing to grade and production impacts and 40 koz 2E from the slower production build-up at Stillwater East (Blitz). Historical production rates are expected to be achieved by the end of 2022. The Stillwater complex is the source of the majority of PGM production in the US.

In the longer term, palladium supply growth in the US is also slowed. Sibanye-Stillwater’s plan is to build up production to 700 koz 2E (~540 koz Pd) by 2027. This is a slower increase, with output lower by 100 koz 2E in 2027 than previously envisaged.

Lower production in the US moves the palladium market closer to balance this year. However, with automotive production still being constrained by supply chain issues and being revised down further owing to the more difficult economic situation, the palladium market could still end the year in surplus, making a price around \$2,300/oz look rather elevated.

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Rhodium, Ruthenium, Iridium



	RHODIUM	RUTHENIUM	IRIDIUM
Reporting Week	\$16,250/oz	\$555/oz	\$4,450/oz
Previous Week	\$16,250/oz	\$565/oz	\$4,550/oz

US bill could accelerate the country's green hydrogen production. The Inflation Reduction Act has been passed by the Senate and will likely be voted through by the Democrat-controlled House of Representatives. It includes a provision for a tax credit to cover the first 10 years of operation for qualified clean hydrogen production facilities. The basic credit amount is \$0.60/kg, but it could be up to \$3/kg if the hydrogen is produced according to certain requirements. This would go a long way to narrowing the cost gap to grey hydrogen production which costs around \$2/kg in the US using natural gas. The speed and scale of installations to take up the credit remains to be seen. If this encourages the use of polymer electrolyte membrane (PEM) electrolyzers, which are considered the more suitable type of electrolyser to use with renewable energy sources, then this will boost iridium (and platinum) demand. The bill also provides money to accelerate renewable energy production in the US and extends tax credits for wind and solar power.

The ruthenium and iridium prices dipped last week, whereas the rhodium price held steady.

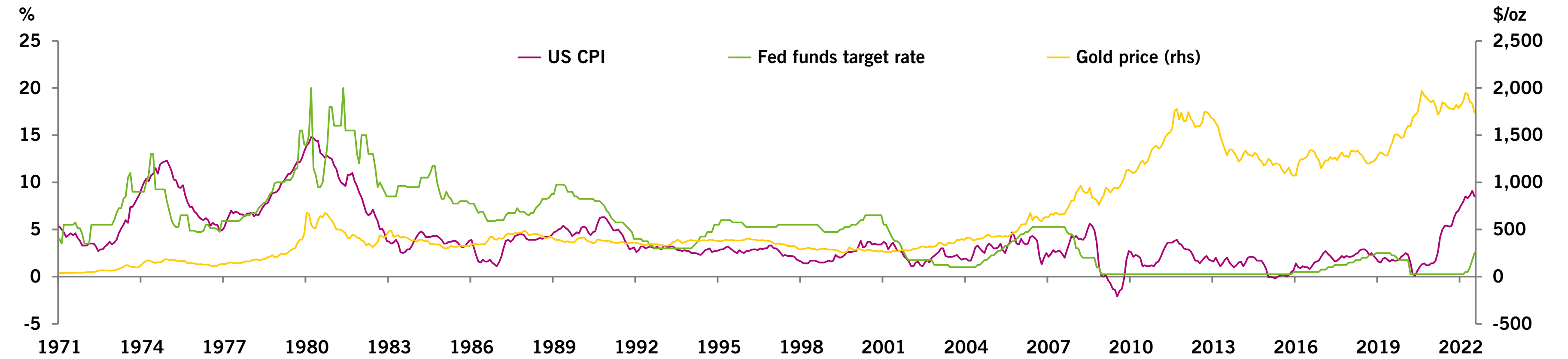
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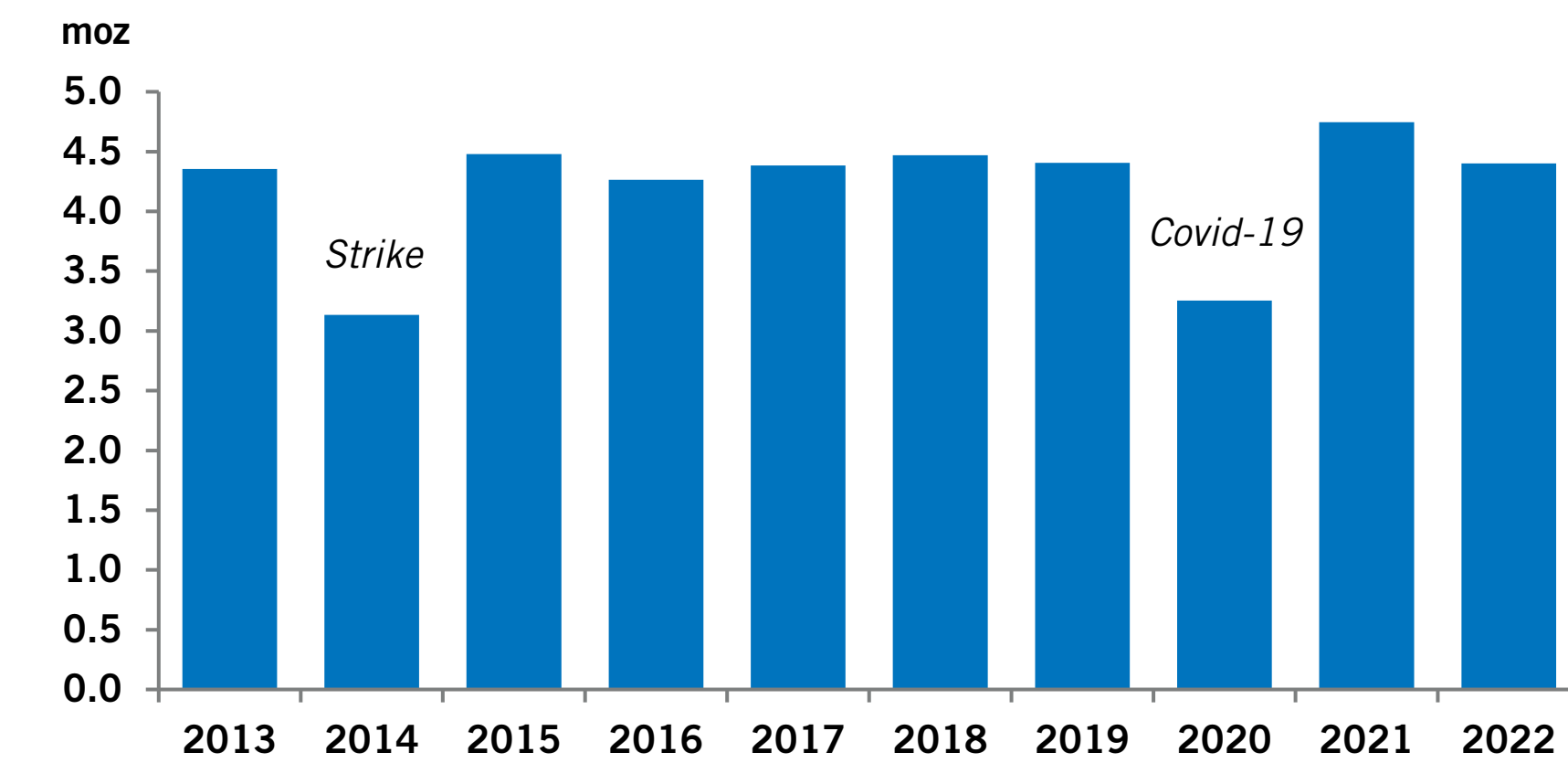
TRENDS AND INVESTMENTS

US inflation, interest rates and gold



Source: SFA (Oxford), Bloomberg

South African platinum production



Source: SFA (Oxford)

Gold:silver ratio



Source: SFA (Oxford), Bloomberg

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