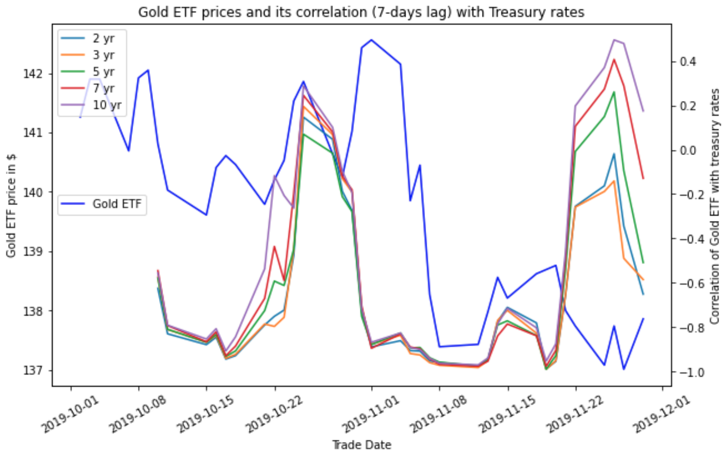
# November 2019 Gold ETF Technical Report

On October 30 2019, the US Fed decided to cut the federal funds rate for the third time in 2019 by 25 bps, thereby nearly reversing the rate hikes of 2018. Despite the American economy's robust fundamentals, the Fed's decision was mainly an attempt to insulate it from uncertainties created by the US-China trade war and a rather tenuous outlook for global growth.


*GLD Closing Price Evolution (Jan'19-Dec'19) (Source: Yahoo Finance)*




*GLD Closing Price Evolution (Oct'19-Nov'19) (Source: Python Code)*

On the same day, the Adjusted Close for GLD initially increased from $141.02 to an October high of $142.56 before it slid to $137.06 in the beginning of the second week of November. Subsequently, GLD price remained within the $137.01-$138.76 band for the rest of the month.

More generally, GLD has rallied since the beginning of 2019, with most of the price momentum generated between May and August. As the Fed pivoted from its hawkish approach throughout 2018 to a dovish tone in 2019, the gold market witnessed a technical breakout to the upside in June/ July, the same time around which the Fed reversed its stance and cut rates for the first time in many years. With global rates largely expected to be on a downward course for the foreseeable future, the current negative interest rate environment, especially in Europe, is expected to provide support to GLD. Gold can be an effective substitute for short-term bonds to insulate investors from the negative yields which many such bonds currently offer.

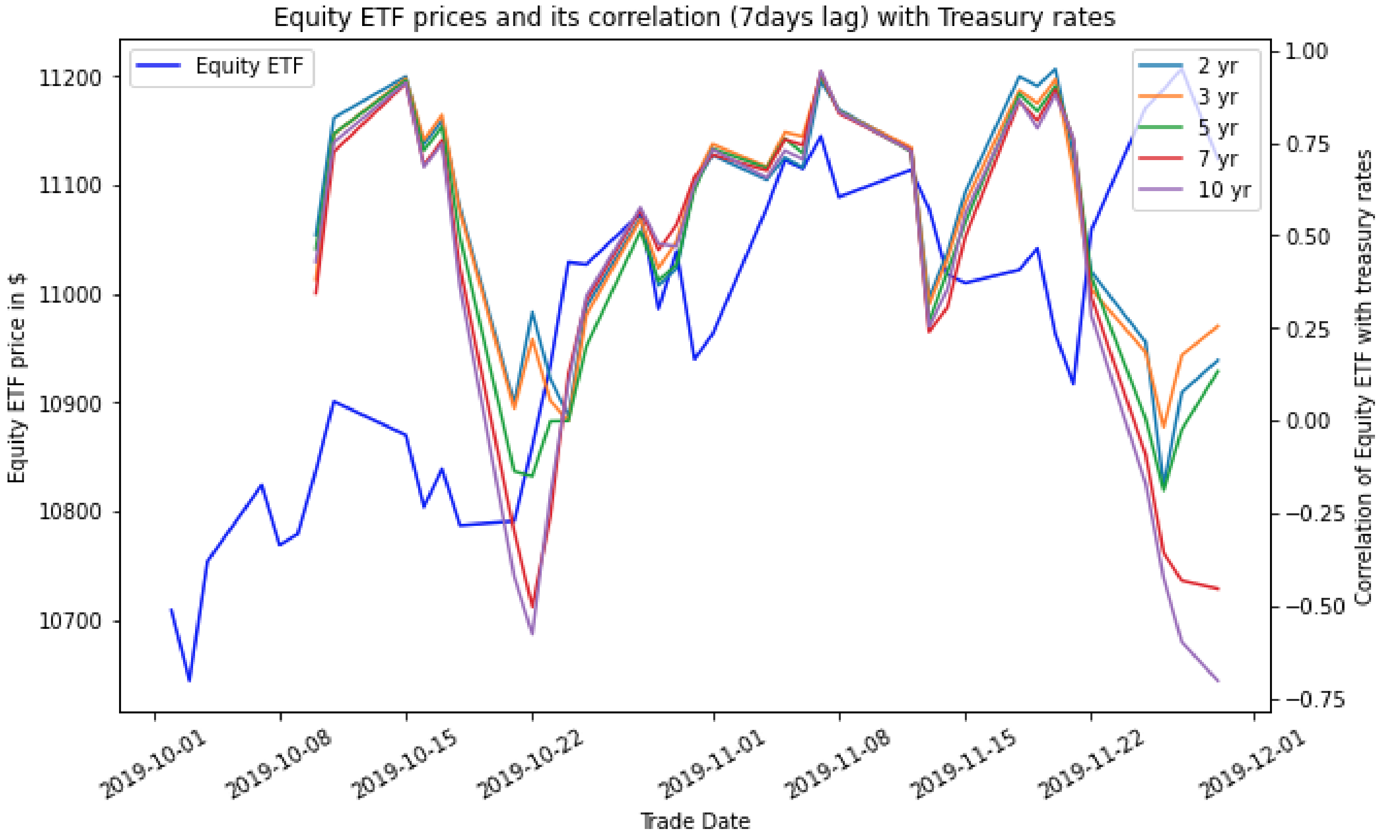
Furthermore, the current uncertainties in global geopolitics, especially US-China trade tensions and Brexit, have weighed down on global economic growth and the financial markets at large. When added to the fact that we are currently experiencing the longest economic expansion in US history and are in the late stages of the credit cycle, it is natural to see a market sentiment characterised by caution and investors constantly trying to time the next recession. That said, the current sentiment is conducive for a medium-term increase in the price of gold.

Lastly, in an era in which the world is aflush with cheap money and in which central banks remain net buyers of gold as a foreign currency reserve asset, gold is increasingly seen as base for capital preservation.

In conclusion, the current monetary policy stance and global economic conditions are expected to provide support to the price of gold over the medium term. However, once the geopolitically driven economic uncertainties clear out and central banks begin to reverse the QE process, this may no longer be the case.

# November 2019 Equity ETF (CSUK.L) Technical Report

As an Equity ETF Manager, I notice a possibility of correlation trading though the asset classes are different.




*Equity ETF Prices and its Correlation (7-day Lag) with Treasury Rates*

The chart depicts the timelines for correlation between Equity Prices and the Treasury Rates (which is inversely related to the Treasury Rates for the same maturity).

We notice that the 5-day window of correlation between gold and treasury rate is very high on October 24-25 followed by a decline in correlation to its lowest by Oct 10-11th.

At this point in time, the Equity ETF should be shorted since it is trading at a very high price and a 10-year bond should be bought since it shows the highest yields and correlation with the Equity ETF. The high yield results in the lowest prices for the Bonds in the given timeframe (Oct and Nov-2019).

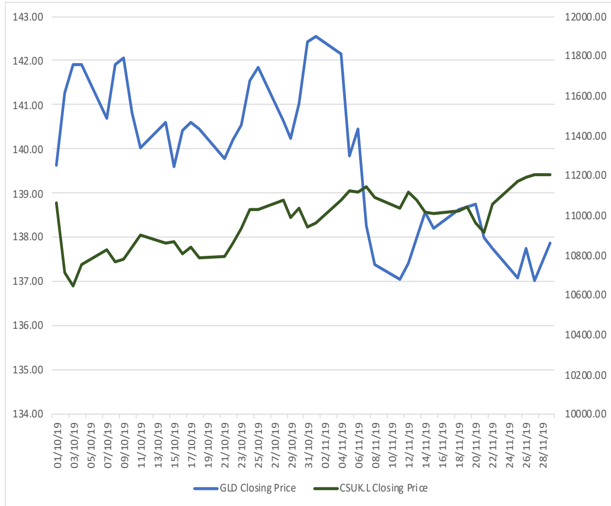
Essentially, a trader should wait for an uptick in correlation to happen (not wait for the correlation to hit the ceiling) and then square his positions. This could happen on Oct 20th 2019. At this time, there is a dip in the Equity ETF value and the 10-year treasury rate also falls almost flat with a minor downward trend.

Lastly, it should be kept in mind that the arbitrage trader should understand that a minor increase in correlation in the chart is a strong correlation actually because the correlation calculated is a 5-day moving average correlation.

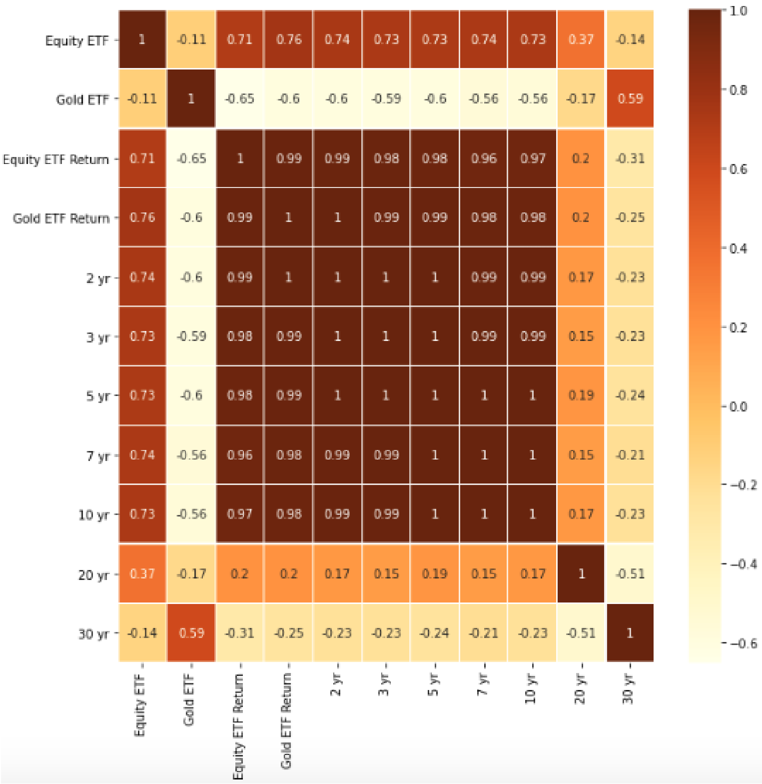
# November 2019 Gold and Equity Technical Report

In response to a 25-bps cut in the federal funds rate, a portfolio allocation comprising of GLD and the CSUK.L (UK equities ETF) will be impacted as follows. GLD, being a substitute for fixed income and a haven in times of uncertainty that have characterised 2019, may increase in the medium-term. Although CSUK.L is an ETF with exposure primarily in the UK, a rate cut is normally positive for equities at large. A decline in the prime rate typically makes borrowing cheaper for companies and consumers, which normally translates into increased discretionary spending, improved profitability, and higher stock prices.


*GLD and CSUK.L Returns throughout 2019 (Source: Yahoo Finance)*




*GLD and CSUK.L Closing Prices (Source: Python Code)*




So overall, a Fed rate cut is expected to positively impact the overall portfolio, *ceteris paribus*.

However, before reaching a conclusion regarding the overall portfolio impact of the rate cut, one also needs to consider how movements in GLD may affect CSUK.L.

Across 2019, returns in GLD and CSUK.L have been largely moving in opposite directions, as shown in the chart on the top left. Historically, the same relationship has also been true for prices of these 2 asset classes. When stock markets are the most pessimistic, gold tends to perform very well.

In conclusion, although a decline in the fed funds rate is expected to provide support to GLD and CSUK.L in the medium term, the final impact of the rate cut on the overall portfolio depends on the strength of the linear and non-linear association between GLD and the federal funds rate, the CSUK.L and the federal funds rate and GLD and CSUK.L. The below table summarises the

*Correlation Heatmap: GLD, CSUK.L, Treasury Rates (Source: Python Code)*

possible outcomes from a portfolio perspective of a decline in the fed funds rate:

| Fed Funds Rate and GLD | Fed Funds Rate and CSUK.L | GLD and CSUK.L | GLD + CSUK.L Portfolio Impact |
|---|---|---|---|
| Negative Relation | Negative Relation | Negative Relation | |
| Stronger | | Weaker | Positive |
| Weaker | | Stronger | Depends on weights of two asset classes |

# Report Summarising Distribution of Work in Group 5-H

- Out of the three members allotted to group 5-H, viz. Anubhav Mishra, Ishaan Narula and Ousman Yimam, Ousman Yimam was not active

- Ousman found it difficult to contribute to the group assignment. When we expressed our concern regarding the same to him, he told us that he would need more time to be ready for the level of complexity which the project requires

- However, he was unable to find that time since he is currently volunteering at a hospital to fight the Covid-19 pandemic in his country and has other commitments

- Nevertheless, he also understood our position and openly expressed his intention to stop working within the group, and we all amicably agreed to request for a new member

- Anubhav and Ishaan took the entire workload upon themselves. In terms of the distribution, both Anubhav and Ishaan independently and together wrote the code and reports for this project

- Since each part of the coding assignment was to some extent dependent on other parts (notably with regard to creation of data frames, calculating summary measures etc.), there were many overlaps in the code which each of us individually wrote

- For this reason, it is difficult to provide a precise description of who did what for the coding part

- Concerning the reports, all reports contain ideas of both active team members which is why it would be unfair to specify who wrote which report