

Cointelation Capital Quarterly Report

Introducing the Cryptocurrency Index and its Overlays

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Introduction

Cryptocurrencies have, ever since inception, offered a new source of non negligible alpha. Let's not delve into whether Cryptocurrencies are a revolution or a bubble since Nobel Prizes in Economics disagree themselves (eg: Paul Krugman vs Milton Frieddman). We will instead focus on constructing a **systematic, committed strategy for the best possible Cryptocurrency index** and allowing the Funds of Funds to decide how much notional they would be willing to invest on that product.

Our Cryptocurrencies Index

There exist more or less 6 players in the world of cryptocurrencies which has the potential to monopolize this market in the future:

- **Bitcoin (BTC)**, the first decentralized digital currency and the biggest by market cap. Invented by an unknown person or group of people under the name Satoshi Nakamoto in 2009, it is currently the least volatile of the main cryptocurrencies but also the one with the lowest growth in the last year.
- **Ethereum (ETH)**, the second Cryptocurrency by market cap, has a bigger potential than bitcoin as it also offers the possibility to build decentralized applications though questions were also raised about its security and scalability.
- **Ethereum Classic (ETC)** was created as a result of a internal dispute fueled by ETH vulnerability.
- **Litecoin (LTC)**, built originally by a Google engineer on the premise that Bitcoin was too slow. LTC main advance is its relative increased speed which has the cost of making it harder to mine.
- **Ripple (XRP)** system was designed to eliminate BTC's reliance on centralized exchanges. It also uses less electricity than BTC and performs transactions faster than BTC. It is surprisingly the cryptocurrency that performed the least in the last quarter.
- **Dash**, called XCoin and Darkcoin in the past, was initially designed to be the most user friendly cryptocurrency. It is the 2nd highest performing cryptocurrency of our portfolio in the last quarter. Overall, in the last few months Dash has emerged as a real up and coming disrupter of the market.

The market is immature because each cryptocurrency tries to address the limitations of the others and all them have individually a very high volatility. In the below graph we can see the returns of these 6 main players during the last quarter.

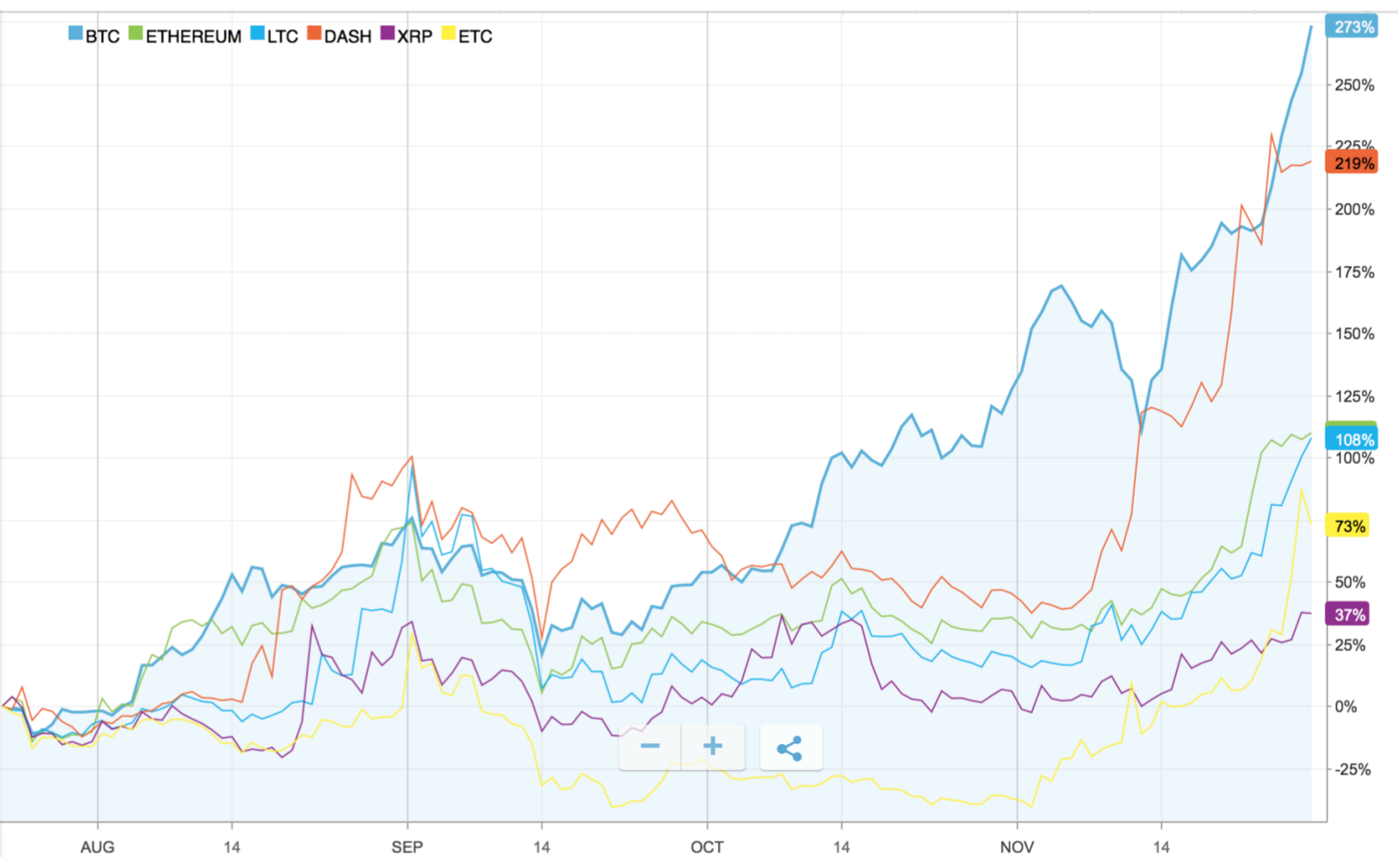


Figure 1: Our Cryptocurrencies Index decomposed in its core elements.
Our Cryptocurrency Index is a systematic strategy which is long these 6 cryptocurrencies with a dynamic weighting, function of the individual cryptocurrencies market cap. This is designed to lower the overall volatility of the constructed index as a **forward looking risk parity** methodology.

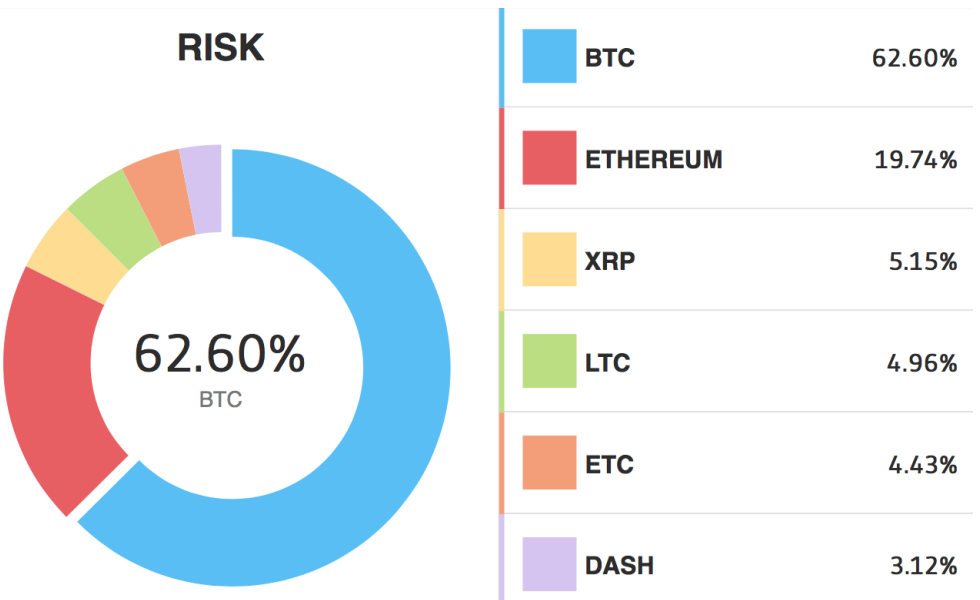


Figure 2: Currently the weights of our Cryptocurrency Index as defined by our dynamical weighting methodology puts 62% exposure on BTC, a ratio we expect to diminish in the coming months.
Figure 3 gives the returns of our Cryptocurrency Index in the last year with the last 6 months being an out of sample analysis.

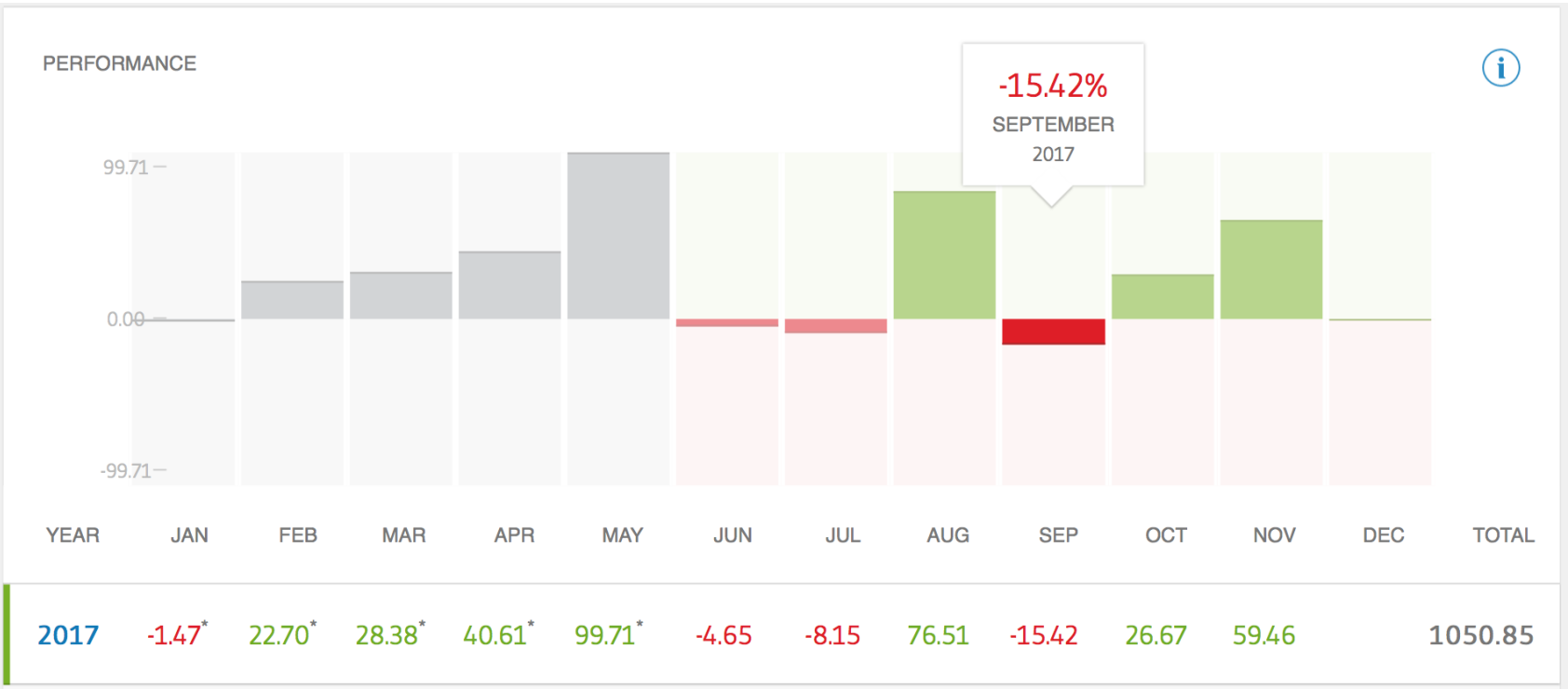


Figure 3: Monthly return of our Cryptocurrency Index (in gray we have in sample data).
Note that we will most certainly increase the number of cryptos in this basket as there exist still a substantial risk of seeing better improved products.

Our Overlay Indexes

However one the main limitations of this methodology is that we can experience drawdowns as big as 15% in one month and execution is still a bit costly. We are currently investigating new ways to improve our execution by changing our broker. We are also trying to incorporate drawdown hedged overlays. We essentially define an optimization by constraint algorithm in which the weights are chosen in order to minimize the Cryptocurrency Index drawdowns (we will spare you the math details for now). We are investigating currently several equities proxies. The first proxy we are currently investigating is the gaming sector. Though not necessarily intuitive our Game Index has proved to be a source of interesting overlay as defined by the objectives above since gaming computer cards are currently the best cryptocurrency mining tools out there.

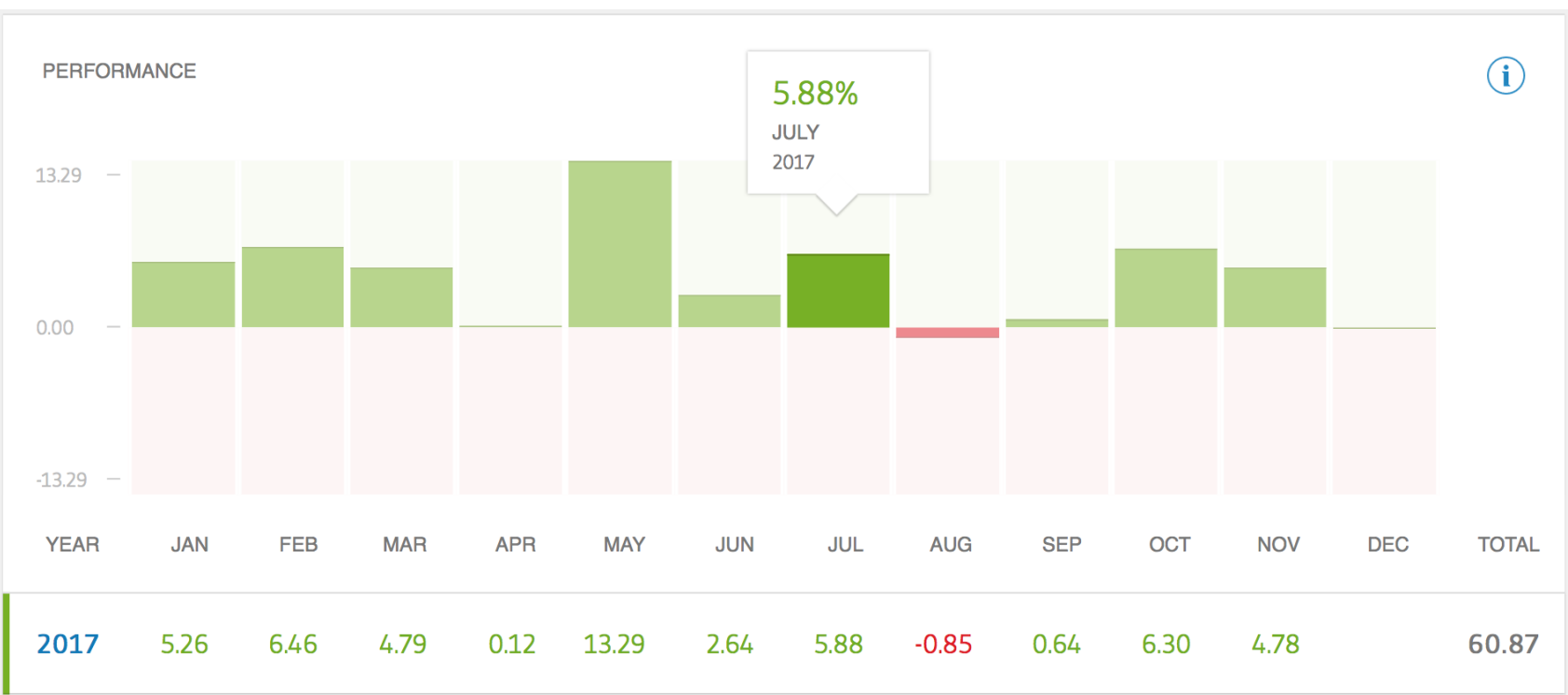


Figure 4: Monthly return of our Cryptocurrency first overlay (Gaming)
A closely related overlay which may be really seen as overlay 1 bis, is our Big Tech index which performance has been summarized below:

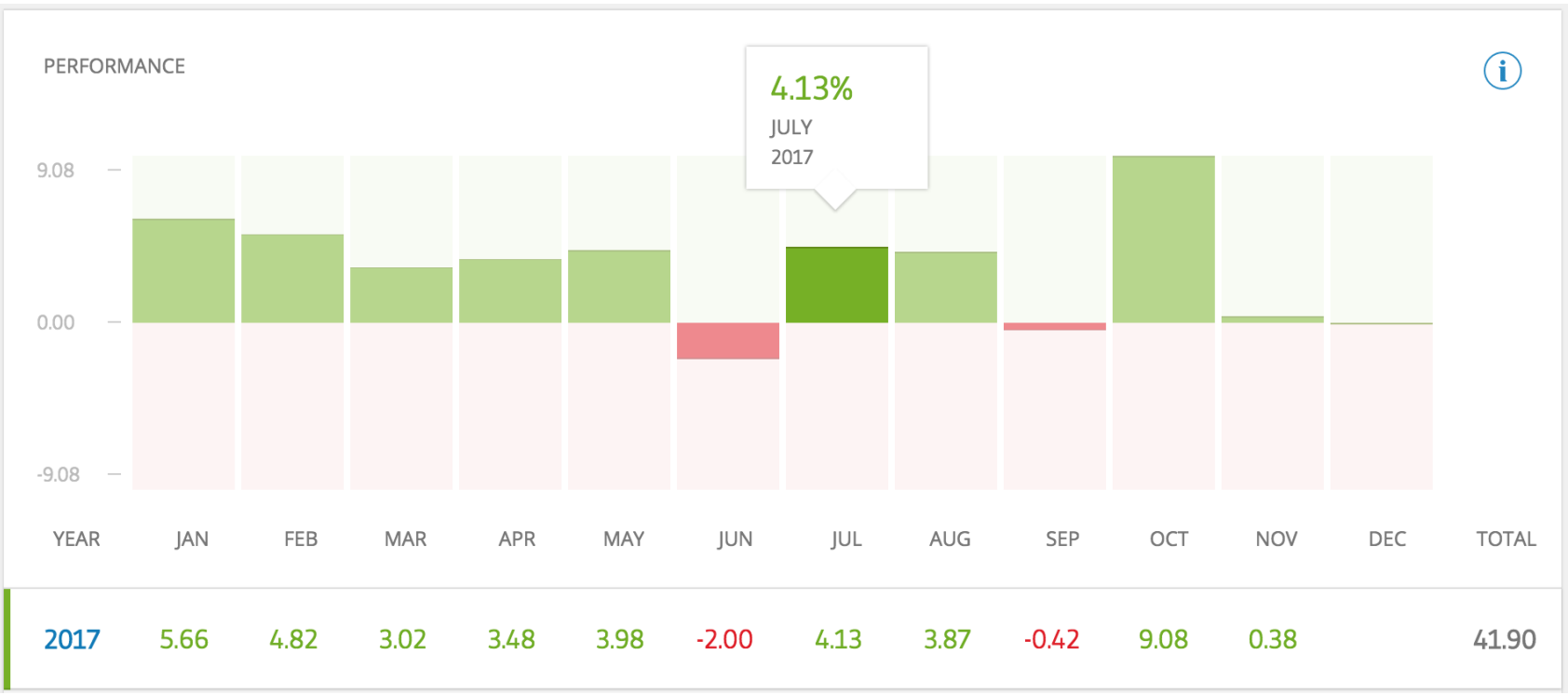


Figure 5: Monthly return of our Cryptocurrency second overlay (Big Techs)
The third overlay we have been considering is our Big Banks Index. The rational being that the big banks would lose part of their business as a result of a rise in the Cryptocurrency markets. Below we can see the returns of our Big Bank Index and can notice that overall this overlay does well in months where our cryptocurrency Index is in a drawdown.

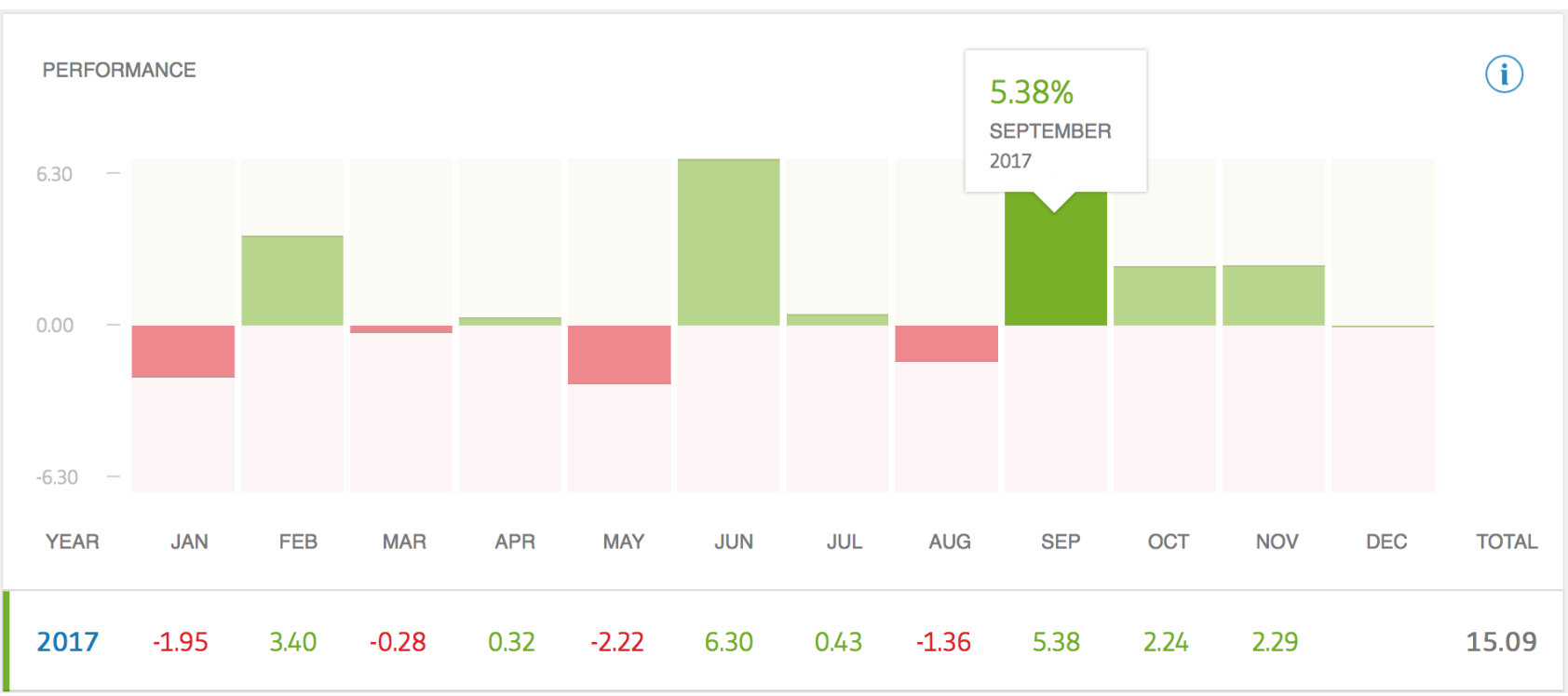


Figure 6: Monthly return of our Cryptocurrency third overlay (Big Banks)
Another overlay we are currently doing research on is the Gold and Energy Index. Though the Index has performed poorly in the last year (see figure 7), it does well during our cryptocurrency drawdowns.

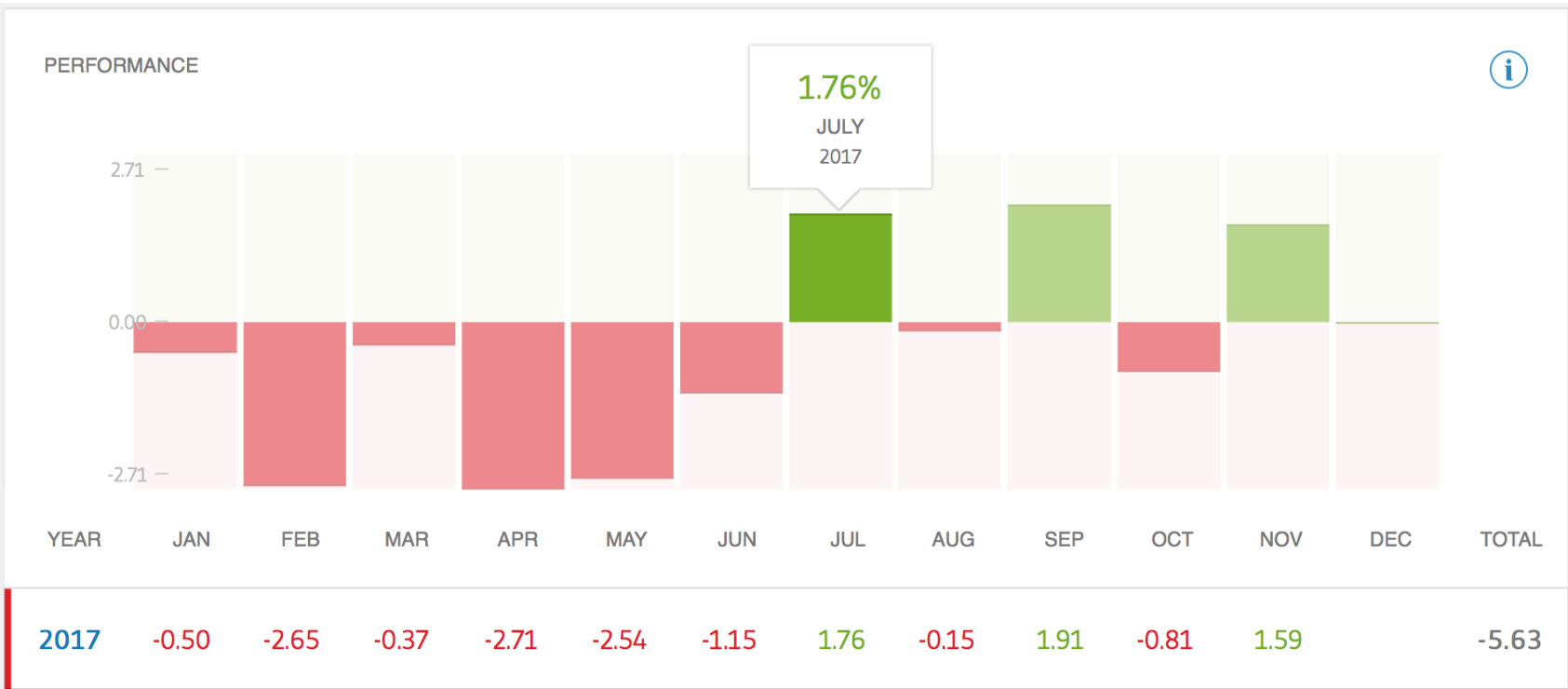


Figure 7: We are currently studying the possibility of adding another overlay to our previously introduced 3 hedge indexes: our Gold and Energy index.

EQRC's overall strategy quarterly report

EQRC has continued a strong trajectory of high return, low volatility in the past 4 months. The ambitious objective of 30% growth has been maintained as we have achieved 12% in the last quarter. More specifically the addition of our overlays has allowed us to decrease drastically volatility since end of September without compromising much the returns for an overall increase in Sharpe Ratio and drawdowns mitigation.



Figure 8: We can see that the returns over August and September compared to October and December is similar (6%) but the addition of increasingly performing overlays has allowed us a decrease of our volatility without penalizing our returns (these are all live traded returns).

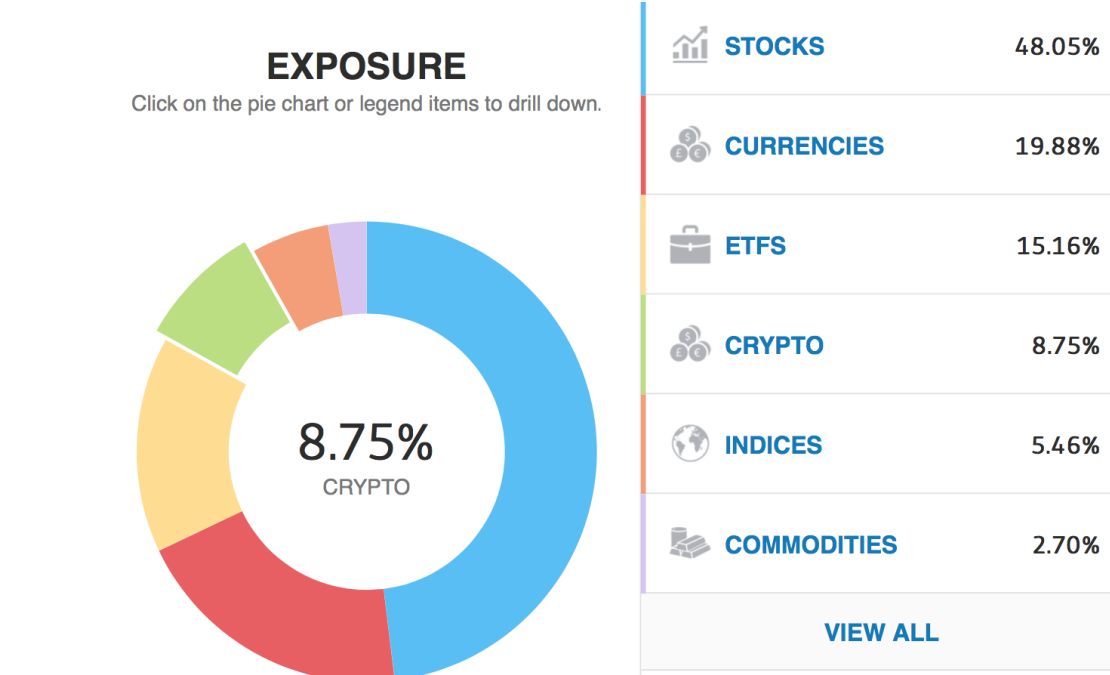


Figure 9: Currently the weights of our Cryptocurrency Index is less than 10% (in notional) of our overall portfolio.

Call for Investors

An increase of Capital would allow us to optimize our processes as currently we are working with an expensive broker. It will also allow us to do additional R&D in order to improve our overlays and additional cryptocurrencies to add to our index as well as study the arbitrage strategies at higher frequencies. It will also allow us to increase the size of the team and slowly but surely get Cointelation Capital out of its EQRC incubator. Our fees structure, "1 and 20" instead of the usual "2 and 20" or "1 and 30" fee models, **is the most competitive fee model that we are aware off on the market.**

Disclaimer

In order to abide by the regulations laid out by the SEC & FCA, we take this opportunity to remind, that although done in good faith, this documents cannot be interpreted as financial advice and that historical returns are not a reliable measure of future performance.

Babak Mahdavi-Damghani (BMD) is the founder of Cointelation Capital currently incubated by EQRC. He is entering the last year of his PhD in Machine Learning for Quantitative Finance at the University of Oxford, highest ranked school in the world according to Times Higher Education in the last 2 years. BMD has been working in the financial industry within a broad range of functions through all the major asset classes in both the buy & sell sides and across different geographical locations. He is also the author of numerous publications, including cover stories of Wilmott magazine and mathematical models (eg: Cointelation, IVP & HFTE model) that are now taught in the CQF.