Oxbridge Capital Partners

Multi-Strategy Quantitative Cryptocurrency Fund Proposal

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Introduction

Whether one believes that Cryptocurrencies are a revolution or a bubble is irrelevant and to some extend a question that is too early to tell since Nobel Prizes in Economics disagree themselves (eg: Paul Krugman vs Milton Frieddman). This discussion behind, Cryptocurrencies have, ever since inception, offered new business opportunities. Oxbridge Capital Partners (OCP), currently incubated by EQRC and founded by Oxford, Polytechnique (l'X) and Cambridge graduates aims at specializing in the extraordinary arrays of opportunities that are offered in that domain. We present here 4 of these domains that can be understood to be a pitch to raise capital for a new promising startup.

Optimal Index Construction

Cryptocurrencies offer an obvious source of alpha at the low frequency domain. We focus on constructing a **systematic, committed strategy** for the **best possible Cryptocurrency index** and allow investors to decide how much notional they would be willing to invest on that product. There exist more or less couple of a dozen players in the world of cryptocurrencies which have the potential to monopolize this market in the future, 6 of which have been mentioned below:

- **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 BTC 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 BTC was too slow, LTC main advantage is its relative increased speed but makes 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.
- **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 of 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.

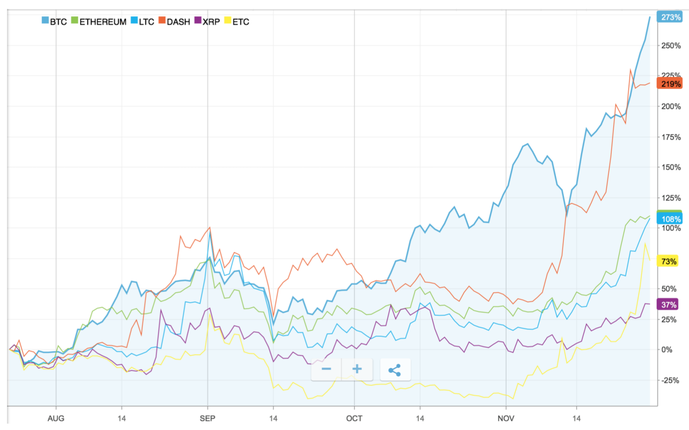

Figure 1: Part of our Crypto Index decomposed in its Core Elements.

Our Cryptocurrency Index is a systematic strategy which is long these 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 gives the returns of our Cryptocurrency Index in the last year with the last 6 months being an out of sample analysis. Note Crypto20 addresses this specific problem and was able to raise $50M with a very basic re-balancing methodology: lacking the latest Machine Learning and portfolio construction methodologies.

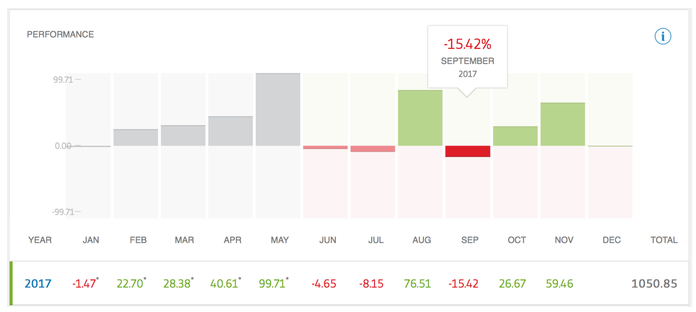

Figure 2: Monthly return of our Crypto Index (in gray: the in sample data).

High Frequency & Automation

In terms of pure arbitrages in between markets, we have detected few trading strategies at the high frequency domain for example when volatility is high. Only experienced and dedicated traders can exploit these opportunities as there are time related constraints that make some trades feasible and others not. There exists also a great deal of statistical arbitrages associated to levels and cryptocurrency properties as they relate to each other's history (eg: forking). We are currently trying to exploit these inefficiencies through the available APIs in various exchanges.

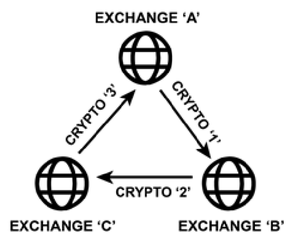

Figure 3: The well known triangular pure arbitrage cannot be exploited with algorithm due to security related features which make pure arbitrages visible with naked eyes in between Coinbase/Gdax, Poloniex or Etoro.

Hedging & Mining Products

One of the main limitations of optimal index construction is that we can experience drawdowns as big as 15% in one month which naturally invites the necessity to incorporate drawdown hedged overlays. For this, OCP offers 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). The first proxy we have been using is one associated to 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.

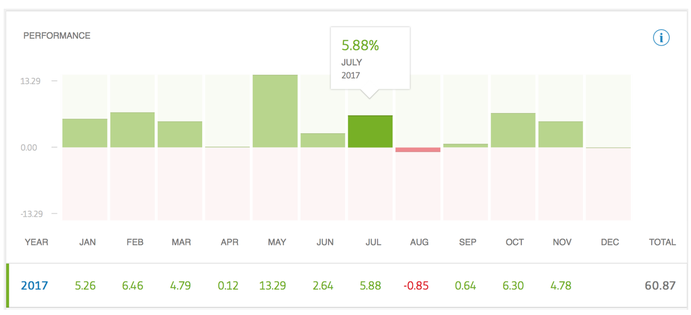

Figure 4: Monthly return of our Cryptocurrency first overlay (Gaming)

The second overlay we are using 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 and vice versa. 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.

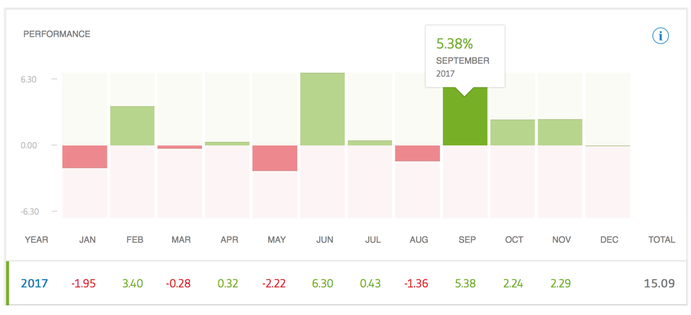

Figure 5: Monthly return of our Cryptocurrency third overlay (Big Banks)

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 6), it does well during our cryptocurrency drawdowns.

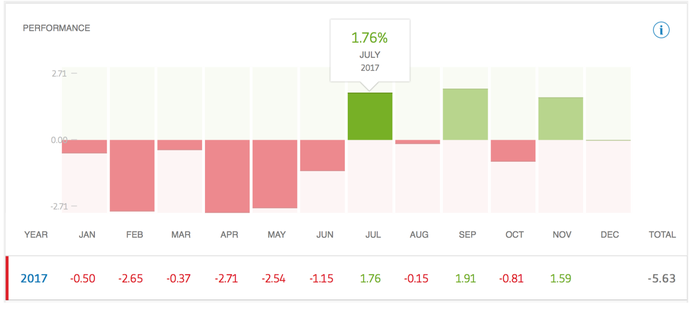

Figure 6: We are currently studying the possibility of adding another overlay to our previously introduced 3 hedge indexes: our Gold and Energy index.

The overall OCP strategy has continued a strong trajectory of high return, low volatility. The ambitious objective of 5% growth per month has been maintained as we have achieved 21% 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 7: 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).

There exist also a great deal of opportunities to offer mining products as the technology is still very intimidating by the average investor. We are currently developing the idea of offering a product which would allow the retail investor to invest some of his money in a our cryptocurrency miner which essentially shares the energy costs and benefits of a miner without doing that with ones computer.

Blockchain Technology Applications

A non negligible effort will be placed in the development of applications that the founders of the fund feel have a low cost but high return potential. Each of the founders have individual experiences in these cognizant social engineering domains and few beta prototypes have already been built. However, we feel there are plenty of possibilities that are naturally generated with the coming of the blockchain technology.

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 get an office together, buy computers for our mining activities, hire few programmers for our apps and more importantly get a bit more leverage on our trading strategies. It will also allow us to do additional R&D and automation of our higher frequencies arbitrage strategies. It will also allow us to increase the size of the team, hire a CEO and slowly but surely get OCP out of its EQRC incubator. Our fees structure, "1 & 20" instead of the usual "2 & 20" or "1 & 30" fee models, is the most competitive fee model that we are aware off on the market.

Babak Mahdavi-Damghani (BMD), projected CRO (currently deputy CEO), did his PhD in Machine Learning for Quantitative Finance at the University of Oxford. He has a broad range of work experiences in the financial industry and is also the author of numerous publications (eg: Cointelation, IVP, UTOPE & HFTE model).

Alex Ksikes (AK), projected CTO did his PhD at the University of Cambridge in Machine Learning. He has a broad range of experience in the start-up and tech industry including as an early adopter of Bitcoin and other cryptocurrencies. He is also the author of numerous publications in Machine Learning and tech related topics.

Fred Firouzi (FF), projected CFO, did his undergraduate and postgraduate studies at the Ecole Polytechnique where he specialized in Probability Theory & Finance. His expertise is in the pricing and hedging of complex financial products exhibiting jumps in price. He also has extensive experience in algorithmic trading and API handling.

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.