

Oxbridge Capital Partners

Yearly Review Newsletter (August 2018)

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Introduction

Coming at the end of our first year of trading, we are looking to summarize our progress this year and re-introduce Oxbridge Capital Partners (OCP), currently being incubated by [EQRC](#). We also lay down our objectives for the coming year and also re-introduce potential members of the team. But prior to doing that, we give a brief overview of the market and the context.

Brief Cryptocurrency History

The bloodbath induced by the world wars culminated with the Bretton Woods agreement which partially addressed the Engineered destruction that had led to the war by making each world currency redeemable in physical gold. Though this system was imperfect, it did however bring stability in the world economy and a period of peace followed. This lasted until 1971 when the USA unilaterally terminated convertibility of the USD to gold, rendering it a fiat currency.

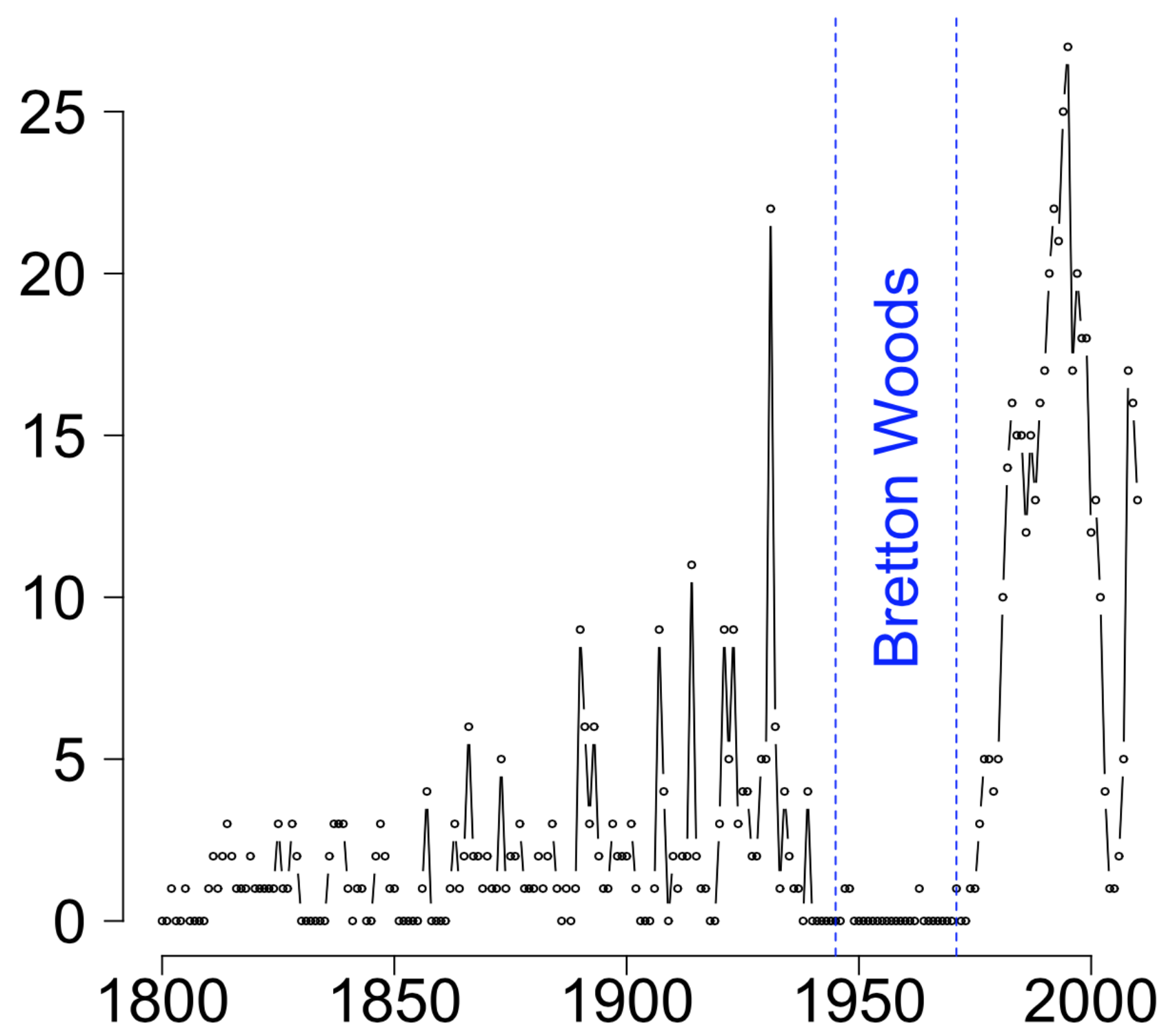


Figure 1: Number of countries having a banking crisis in each year.

Commodities being priced in USD, many of the nations (Venezuela, Libya etc...) rich in natural resources felt naturally compelled to fight this alternative banking model with their own (eg: [Gaddafi's gold-backed African currency](#)) model. These attempts at escaping this USD domination have been systematically contained with a combination of wars and propaganda which have led to the creation of cryptocurrencies.

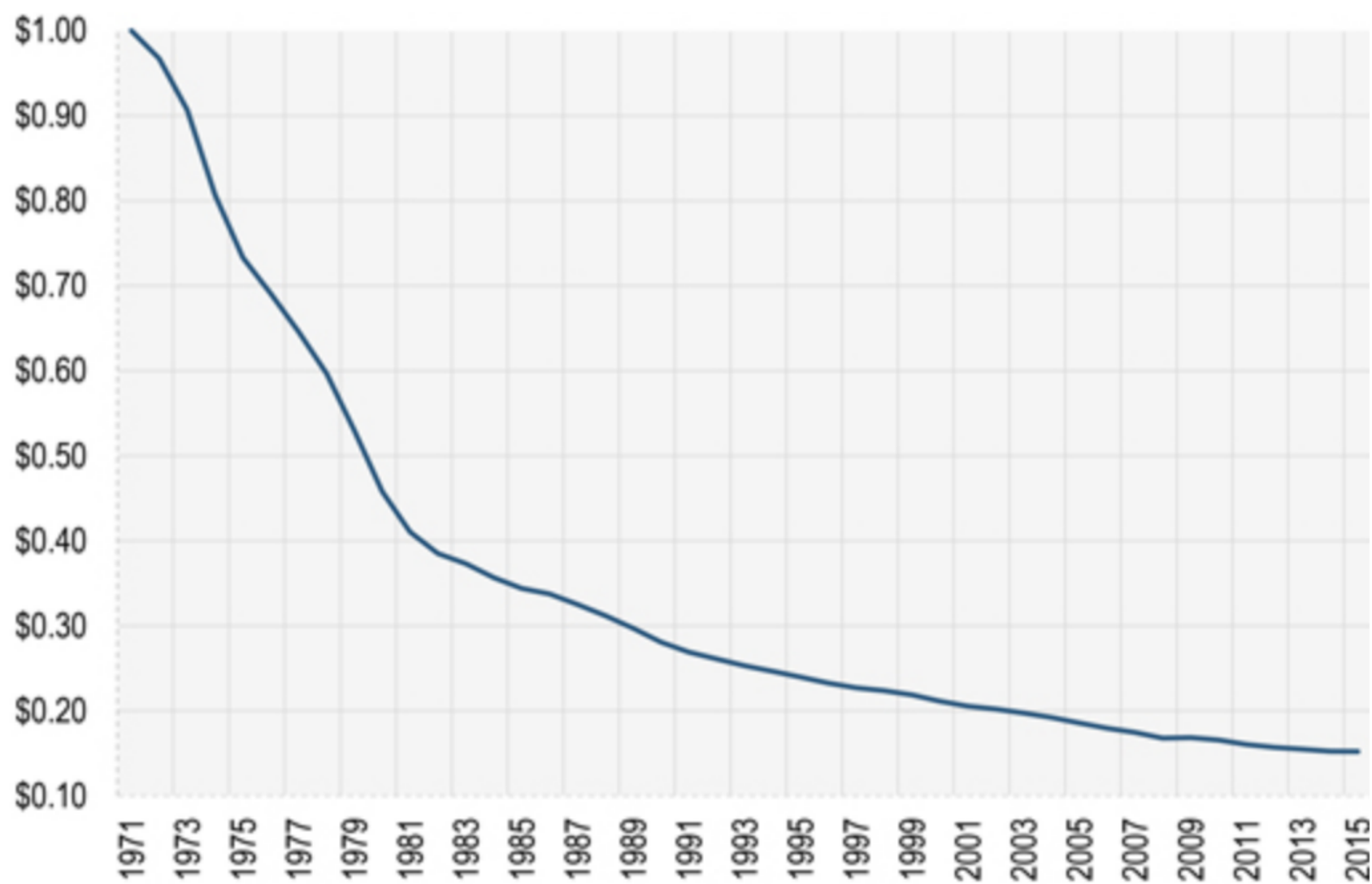


Figure 2: USD purchasing power since 1971 (85% loss).

Because going back to the gold standard is implicitly a [war declaration on the USD](#) and therefore an insured auto-destruction, many see cryptocurrencies as another inflation resistant tool which can also be easily stored and remains divisible. Though as abstract as the USD (it has a value because others believe it does), cryptocurrencies are decentralized and therefore cannot be created out of thin air and it is also anonymous which prevents targeted military intervention.

Cryptocurrencies Increased Importance

Though not perfect cryptocurrencies do address the fundamental issues that most countries have with the post Bretton Woods fiat currency model. Many countries facing embargoes have started investigating cryptocurrencies as a way to escape the USD. For instance, [Venezuela has recently launched the "Petro"](#), its own cryptocurrency backed by oil. Other countries are also [currently developing their own cryptocurrencies](#), for example Russia, China, Sweden, Japan etc ... Though there are [plenty of propaganda belittling the emergence of cryptocurrencies as a legitimate long term alternative to the USD](#), more and more countries hostile to the USD are taking important steps towards financial

freedom and this can be seen by the cryptocurrency market cap steadily increasing.

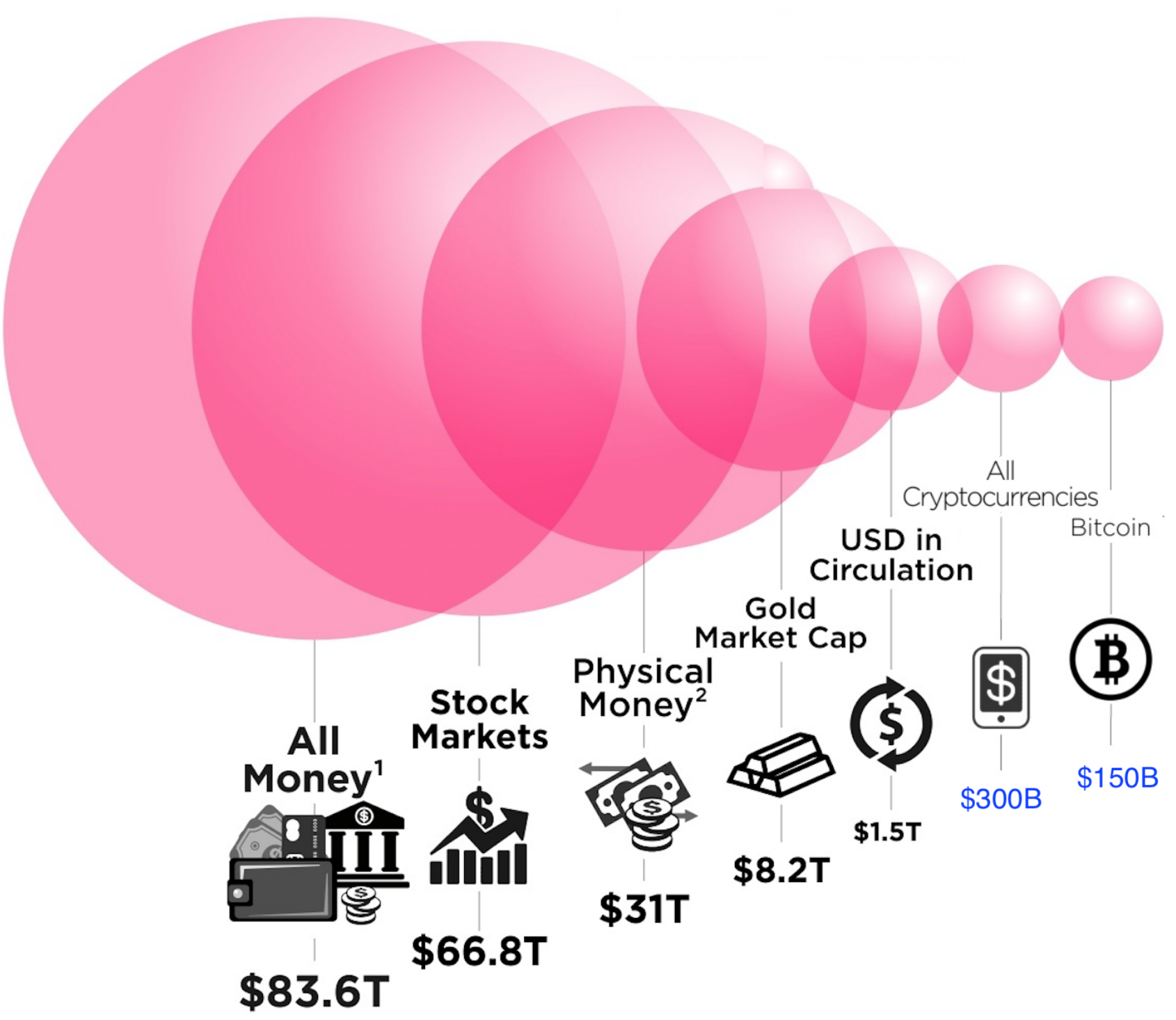


Figure 3: Putting Cryptocurrencies in perspective.

Though it remains small compared to all of the USD, it is fast catching up to the one in circulation as well as to the Gold market. It may be unlikely to be immediately adopted by some of the big companies, it is however very likely that it will be the case in the coming decade as cryptocurrencies have started being used as day to day currency by political parties that are criticizing USD's domination. It is also already at a \$300 Billion Market Cap (and still increasing).

Review of our first trading year

Our diversified long only strategy (figure 5) involved of a Forward looking Risk Parity model centered around cryptocurrencies (figure 5) but incorporated in a portfolio consisting of 4 overlays (figures 6, 7, 8, 9) striving to aim for a fair balance between abiding by the rules associated to the risk parity portfolio theory within and amongst the core strategy and the 4 overlays while keeping the re-balancing cost in mind. Overall we have been able to sustain strong consistent results on a trimester basis, achieving **34.5% in the last year overall** while remaining positive in each trimester.



Figure 4: Our P&L graph in the last year.

Our overlays (figures 6, 7, 8, 9) have been able to resist the cryptocurrency drawdown in the last trimester achieving a small gain in the overall portfolio despite a bearish cryptocurrency market in the last trimester.



Figure 5: Our Cryptocurrency focused strategy has been returning 228.5% in the last year, an excellent return with however an important drawdown since January that has been mitigated through multi-diversification strategies (figure 4).

Generally speaking the Cryptocurrency market has been quite volatile and bearish since January. It can be speculated that we should have implemented a harder stop-loss on the strategy but that would have meant also missing out on rallies from the market and paying additional transactions costs in the process. We

also wanted to remain consistent with respect to of early year objectives (stay long cryptocurrencies but hedge with overlays). Our approach instead is to keep a lower weight on the specific, highly volatile, strategy in order to fine tune our overall performance (see figure 4). For instance our mining card strategy has been doing quite well in the last year as it can be seen from figure 6. For more information around the rational, feel free to take a look at our previous reviews (eg: [Introduction to OCP](#) or [OCP Bi-Yearly Review](#)). More specifically the strategy made 22.5% in difficult market conditions.



Figure 6: Our Cryptocurrency Mining focused strategy has been achieving 22.5% in the last year.

Another overlay strategy we are using is our Bank focused one. For more information around the rational, feel free to take a look at our previous reviews (eg: [Introduction to OCP](#) or [OCP Bi-Yearly Review](#)). This is one of our most disappointing strategy as it neither brought alpha nor achieved its role of overlay. However, even with several sound strategies, we are never hedged against unforeseen events. We still chose to present this strategy for the sake of transparency and honesty.



Figure 7: Our Banking focused strategy.

Though we experienced a drawdown early to mid February our Tech Overlay returns have been strong providing an excellent source of alpha on top of interesting overlay properties (eg: doing well since the January 2018). It achieved overall 38.6% in the last year. For more information around the rational, feel free to take a look at our previous reviews (eg: [Introduction to OCP](#) or [OCP Bi-Yearly Review](#)).



Figure 8: Our Technology focused strategy has been achieving its role of lower hybrid proxy/overlay achieving 38.6% in the last year.

Our Gold and Energy strategy strategy has been partially fulfilling its economical hedging rational by limiting our overall drawdown with however limited performance on its own which is usually the purpose of an overlay.

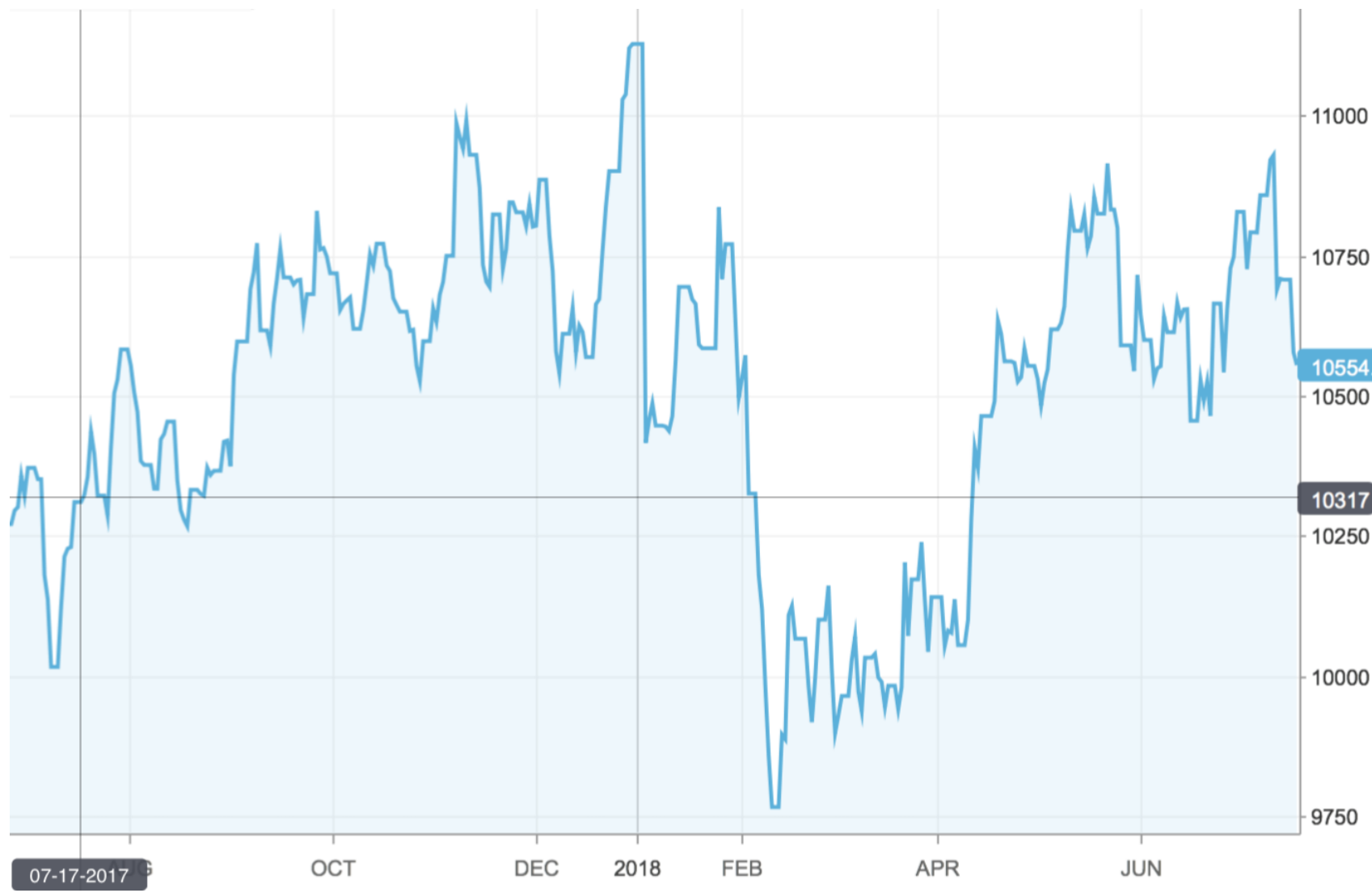


Figure 9: Our Gold and Energy Strategy has returned 8%.

We have been able to fully automatize our Risk Parity cryptocurrency strategy using the Poloniex API and are currently in the process of incorporating additional strategies on various exchanges using the same data based automatic methods. However, the volatile aspect associated to risk parity trading long only strategies, as well as the demand from our potential clients has encouraged us to specialize in **beta neutral strategies**. As a reminder taking market-neutral positions comes to taking long and short position in highly correlated assets such as cryptocurrencies and therefore being hedged against broad market movements in general and instead aiming to achieve profit in the relative performance of one cryptocurrency against another one.

Classic Beta Neutral & HFT Strategies

Focusing on Beta Neutral Strategies we have decided to construct some of the classic strategies that are often used on other markets such as for example Momentum or Mean Reversion strategies. An example of beta neutral momentum would be for example to go long the top 3 and short the bottom 3 cryptocurrencies using the last 90 days data and re-balancing on a 30 day basis. An example of beta neutral mean reversion strategy would be for example to go long the bottom 3 cryptocurrencies that are 2 sigma away from their mean using the last 15 days of data and being short the top 3 cryptocurrencies that are 2 sigma away from their mean (again using the last 15 days of data). As we have mentioned we have been able to fully automatize our cryptocurrency Risk Parity strategy using the Poloniex API. We have now started a new phase of research at the higher frequencies. Learning most of the advanced function of the Poloniex API has placed us in a situation where investigating other APIs such as Bitrex, GDAX, HitBTC or Binance has become easy. This has for final objective to start implementing our beta neutral triangular pure arbitrage strategy. Cryptocurrencies are extremely prone to sponsored **misinformation** aimed at discouraging mainstream use. This makes research sometimes challenging. Added, to this, **hacking** is occurring on a regular basis with substantial loss. Though these losses are sometimes unavoidable they can be mitigated by spreading the risk.

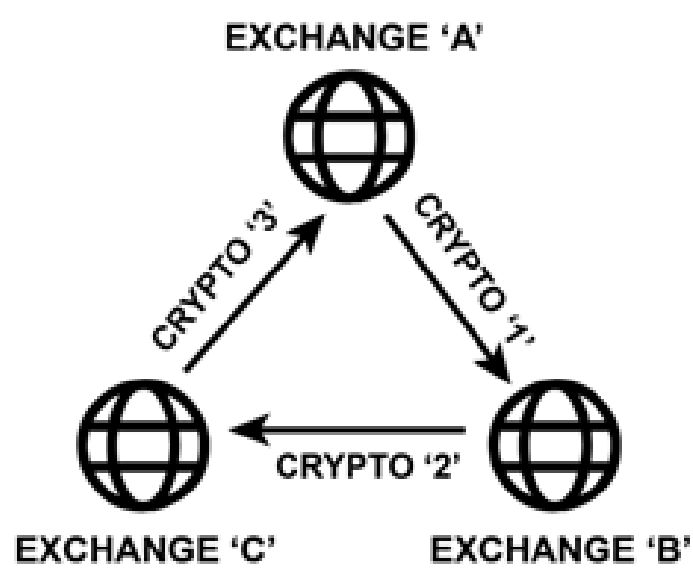


Figure 10: Risk Spreading & Triangular Arbitrage Illustration

Indeed, allocating the coins over several exchanges can also generate pure arbitrage opportunities in between exchanges. It can also multiply investment opportunities in general within each of them. Generally speaking there are many possible statistical arbitrage opportunities that can appear in these exchanges and which detection requires advanced Machine Learning techniques.

Deep Learning Research & Development

Also we were able to recuperate very valuable GitHub OOP code which we are currently trying to expand and adapt to our trading systems. We are also trying to organize our strategies under an OOP framework in which the mother class will consist of the HFFF recently introduced (see [Introducing the HFTE Model](#)) which we plan to first test with few beta neutral Oscillators (short-term overbought or oversold conditions), starting with the celebrated MACD (see figure 14).

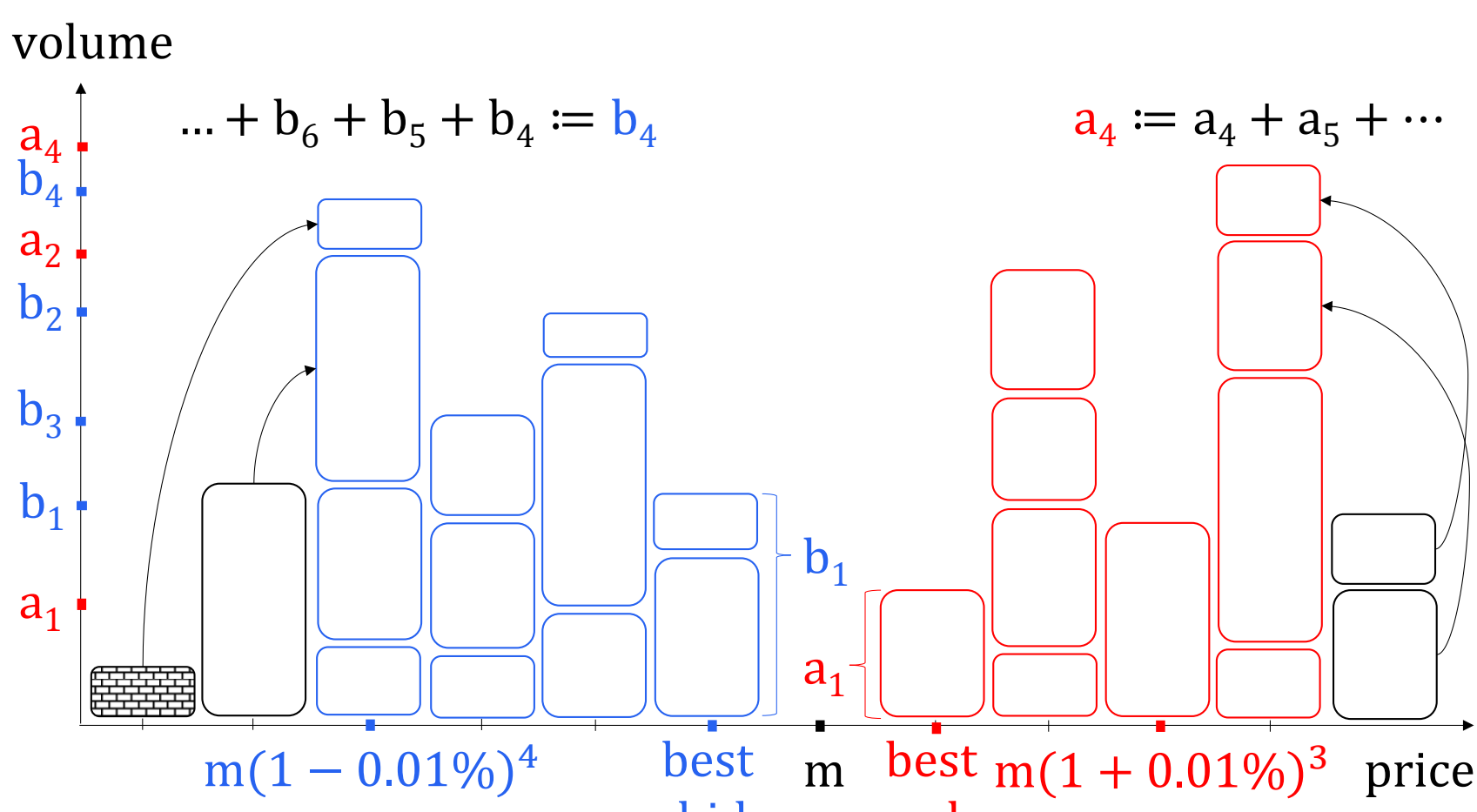


Figure 11: Order-book visual representation.

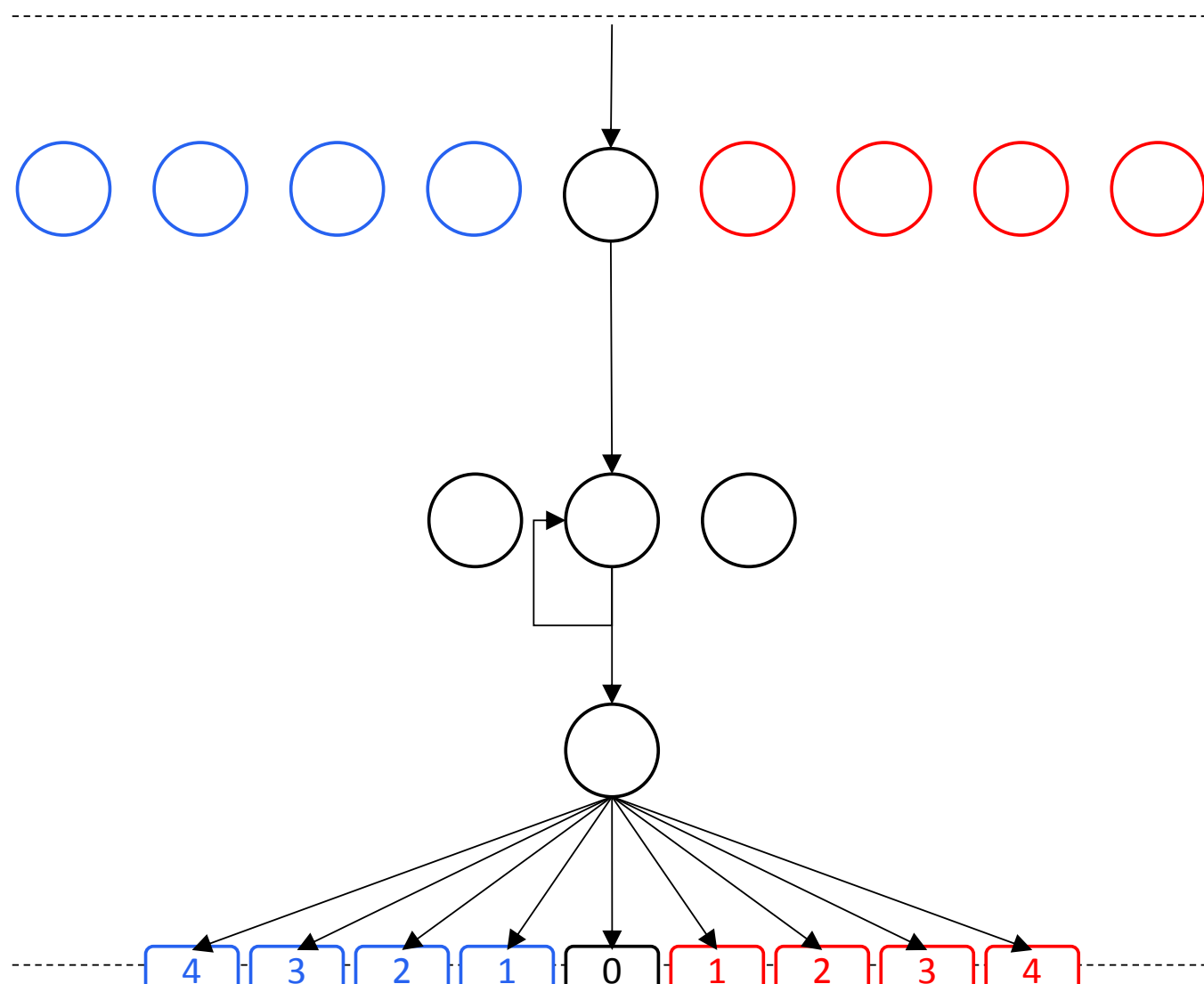


Figure 12: The EWMA Strategy in terms of HFFF format.

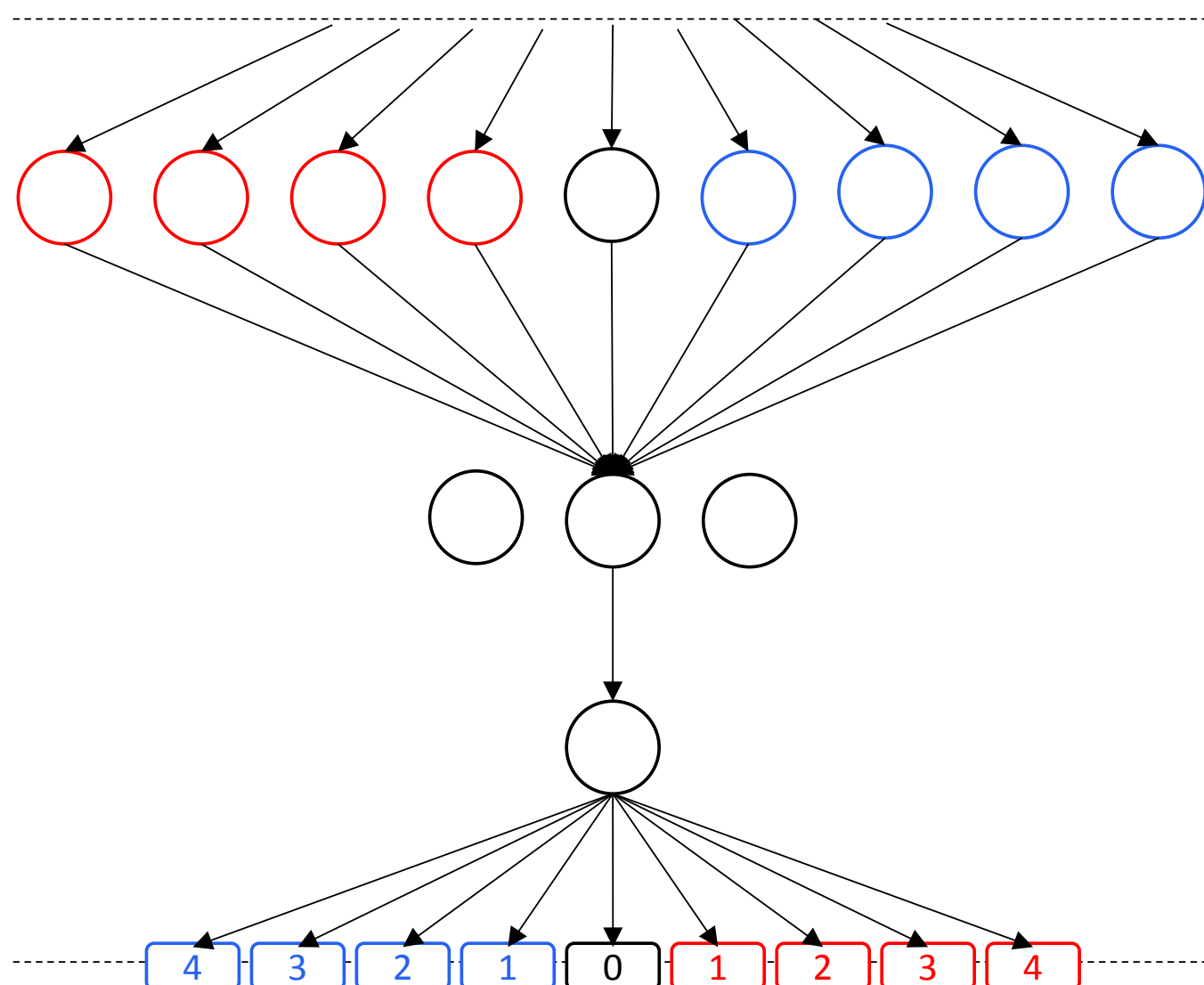


Figure 13: The MLR strategy translated in terms of HFFF format.

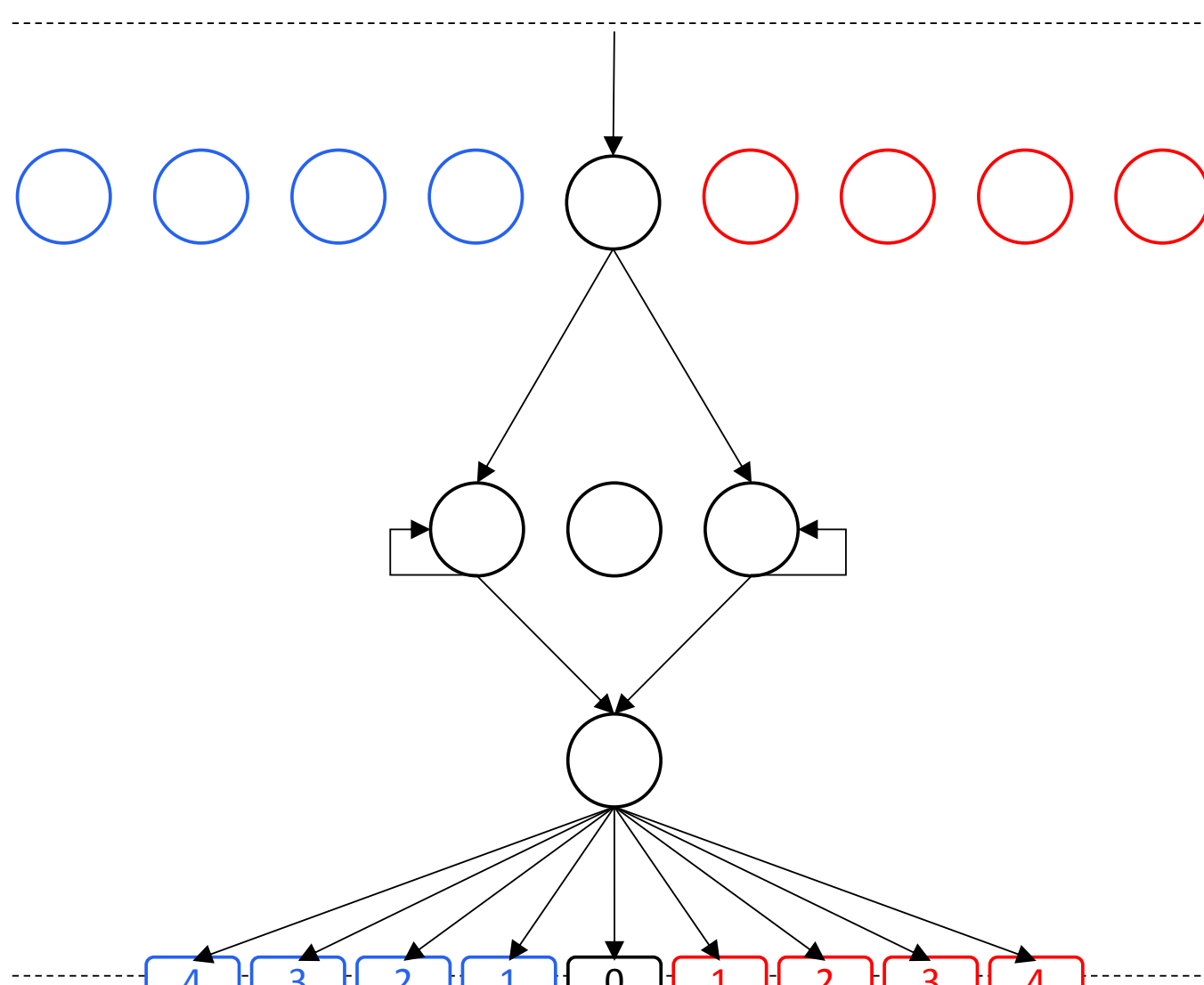


Figure 14: The MACD strategy translated in terms of our HFFF format.

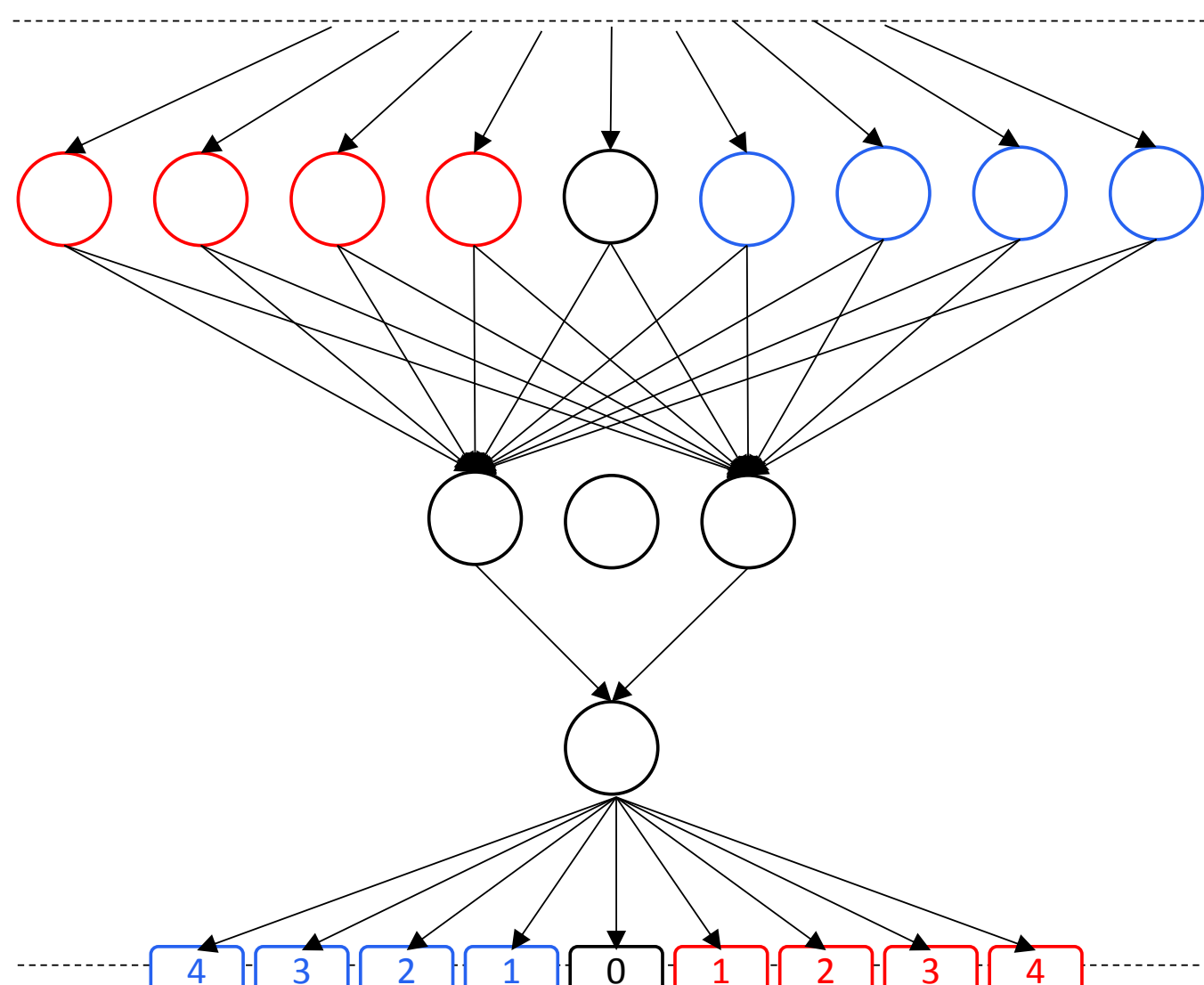


Figure 15: A Lasso regression translated in terms of HFFF.

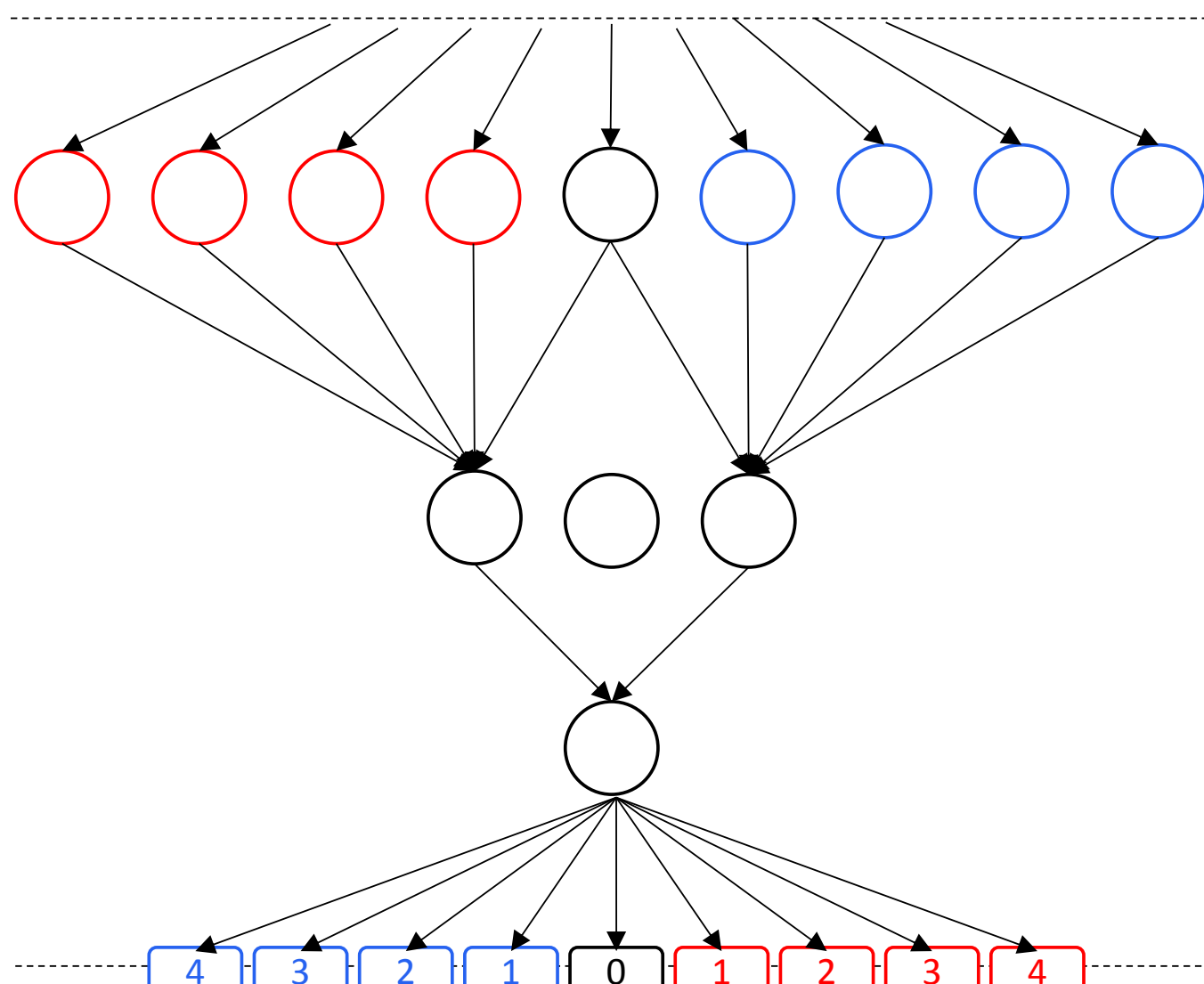


Figure 16: The XOR strategy translated in terms of HFFF format.

For instance associated to price levels, relative fundamentals (eg: forking) or at the level of the order book itself. We are currently trying to exploit these inefficiencies through the available APIs in various exchanges.

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 and which will most take advantage of a decentralized model. Each of the founders have individual experiences in these cognizant social engineering domains and few beta prototypes like [Oolalaaa](#) or [Heya](#) have already been built. However, we feel there are plenty of possibilities that are naturally generated with the coming of the Blockchain technology with possible extensions in decentralized applications. For instance [Oolalaaa](#) is the first “pro-mankind” (to oppose with the Malthusian model) dating website that we are aware off.

Potential Team & Call for Investors

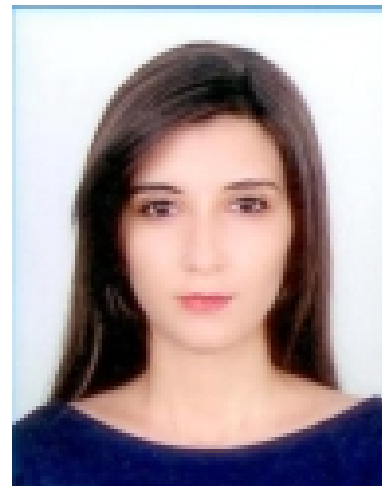
The current team will be initially built around Bobby Damgani who believes that the initial expansion should incorporate Fred Firouzi and Kate Mustafayeva for logistics reasons. More specifically these three are already working together on a daily basis as they are all neighbors. If the capital increases above a certain threshold we aim at bringing the rest of the team who are currently working informally from distance. Generally speaking, we are currently discussing increasing our capital with external investors and have had our first verbal commitments with [Iratel Ventures](#) and [Columbus Capital](#). We have a great deal of room for growth though the opportunity for investment will soon close as the cryptocurrency market cap is such that our strategies will not be able to accommodate notional beyond a certain point. Cryptocurrency strategies especially in the higher frequency cannot accommodate an exorbitant capital. For this reason, in order to limit the number of investors we have reviewed our fee model back to the “2 & 20” or “1 & 30” fee models.



Babak Mahdavi-Damghani (BMD), 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). He is also behind [Oolalaaa](#)'s conceptual design.



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.



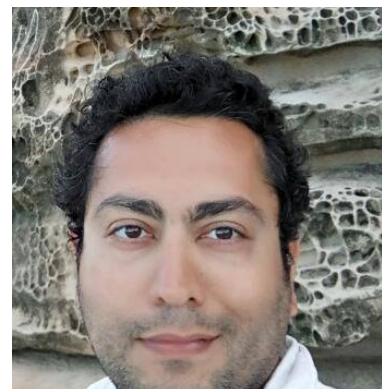
Kate Mustafayeva (KM), projected Quantitative Analyst, did her MSc and PhD studies at the King's College London where she specialized in Financial Mathematics. On top of her academic experience KM has extensive experience in risk parity, classic beta neutral hedge fund strategies and python programming more specifically on backtesting and reporting.



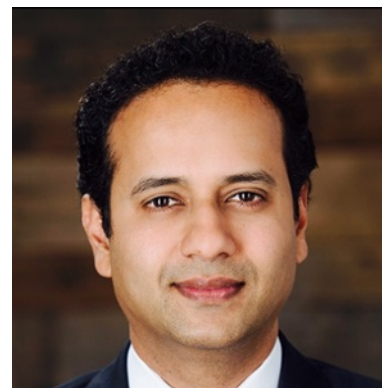
Alex Ksikes (AK), projected CTO, did his PhD at the University of Cambridge in Machine Learning. He has a broad range of experience in the start-up and tech industry including as an early adopter of Bitcoin and other cryptocurrencies. He is also the author of numerous [publications](#) in Machine Learning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



Benny Abrishamchi (BA), has a PhD in Engineering from King's College London and a partner at Iratel ventures, a VC who has been interested in [EQRC](#). The scope of the collaboration could go as far as a partnership and potentially expand to incorporate few other start-ups such as [Elvotra](#) or [Marioe Guiluz](#) that are currently in a state of unstructured partnership with [Iratel Ventures](#) but which skills could contribute in reinforcing our IT infrastructure to work on our [decentralized app ideas](#).



Sean Ahmad (SA), has a gold medal in the international math Olympiads of 1998. He has then acquired his PhD and worked across the most prestigious banks (Goldman Sachs, Morgan Stanley, Barclays etc ...). He is an experienced Systematic Trader using various statistics, machine learning/AI, NLP techniques for developing strategies of various frequencies.



Ven Raju (VR), has studied at the University of Pennsylvania and at the University of Oxford. Prior to starting his MBA at the Wharton School VR, had acquired a broad range of experiences in entrepreneurship, launching and managing [VAC global](#). His all around expertise in management makes him a valuable asset to have as the fund expands.



Ali Adeli (AA), projected CRO, has studied at the LSE and UCL Financial Mathematics and Computer Science. He also has prestigious industry focused certificates like the CQF. On top of his educational background, he has a great deal of experience in the Finance and Risk industry notably working for UBS, RBS and Nomura. He also has a great network in the financial industry notably, the heads of central banks.

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.