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SYNTHETIC DIGITAL ASSETS

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The Factory Banking Project

A Brief Introduction to Proof-of-Value (POV) Synthetic Mining Protocol

List of Problems Solved By POV

- Scams – by backing all new digital assets with value it is not possible to sell "worthless tokens"
- Costly and difficult POS hybrid integration
- Destruction of fledgling POW mining cottage industry
- Risky and economically inefficient consensus mining
- Regulatory risk (in USA) of running Master Nodes
- Network efficiency (over-capacity)
- Blockchain forking
- Inefficient pricing of new digital assets

History of White Papers

In *Value Coevals* (WP1-M) we looked at the origins of Blockchain, the hypothesis of Factory Banking and specifically, we identified a value coeval proposition on which decentralised economics took place, and specifically which the blockchain enabled.

In *Bitcoin's Price Deflation* (WP2-Z) we discussed various possible stimulae for the re-issuance of a legacy Blockchain asset similar in quality to Bitcoin with a highly distributed ledger via 4 years of previous POW mining activity but with low trading participation. In this paper we identified specific strengths of the POW mining protocol versus the POS mining protocol.

In *The FUTR of Crypto* (WP3-F), a completely original, previously unseen swaps model is revealed via way of configuring Ethereum smart contracts. Ultimately, what is conceived is a Blockchain token swaps application that by virtue of reorganising delivery relative to receipt of core cryptocurrency used to pay for the issuance of new tokens, results in a higher value being obtained for the purchaser than was used to pay for the original tokens.

In summary, we have therefore identified the following:

1) A paradigm within which value is created on the Blockchain
2) Specific advantages of proof-of-work (POW) versus proof-of-stake(POS)
3) A way of expressing these POW advantages without complex new technologies

Creation of POV

Proof-of-value is a synthetic mining protocol. This means that we do not employ in the process of "mining" any of the sort of complex tech builds that the construction of traditional POW and POS mining applications entails. As such, no command-line protocol exists as it does in standard software build-outs. Rather, POV uses the commands already installed in the smart contract technology to replicate Blockchain commands.

Rather, we use the full functionality of the Ethereum Virtual Machine, a smart Blockchain, in order to produce the effect of a POW mining protocol with the same identical value advantages of POS (e.g. environmental efficiency in production of tokens).

Synthetic Mining Tech: A Source of Blockchain Disruption
Synthetic application of the technology is important at some point in the innovation cycle or else the temptation is to *over-build.* The process of over-building Is ultimately self-canabalistic, as Clayton Christensen points out in his theory of disruptive innovation. A disruptive innovation is one with "lower gross margins, smaller target markets, and simpler products and services that may not appear as attractive as existing solutions when compared against traditional performance [but] because these lower tiers of the market offer lower gross margins, they are unattractive to other firms moving upward in the market, creating space at the bottom of the market for new disruptive competitors to emerge."

This description fits synthetic mining protocols perfectly. POV synthetic mining protocols are less eye-catching to the technologist than master node-enabled proof-of-stake Blockchains with multiple consensus mining algorithms, for sure, since they are in effect just tradeable smart contracts and escrowed POV digital assets.

However, the lacking in complexity, the more defined context of value that is inherent in such synthetic digital assets (as a result of the value held in smart contract for the duration of the token's life-span), the infinite issuance possibility of such smart contracts, combined with the infinitely lower complexity of such synthetic mining protocols, will ultimately make them the number one class of Blockchain mining algorithm employed in digital asset issuance and trading.

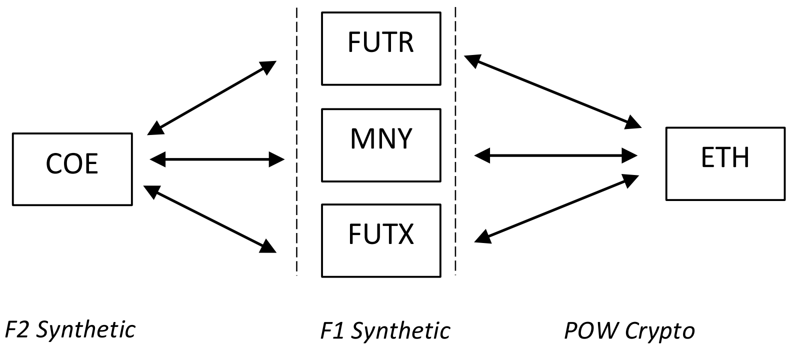
The fourth and final step of this 9-month experiment produces the most efficient form of Factory Banking yet, whereby value is created simultaneously at the point of manufacture even as it is realised either in immediate short-term arbitrage gains or in medium-/long-term price efficiency (deep value) gains by the smart contract value miner.

The POV synthetic protocol has a number of additional technological advantages implied in it that address current network overcapacity problems. These, in addition to the value production mechanism described above are the subject of the fourth and final White Paper in the Factory Banking series: *Proof-of-Value: A Synthetic Mining Protocol For Blockchain* (WP4-V).

Value Mining (Proof-of-Value) – Factory Banking Model
Value is never naked: it is always integrated by way of reference or relative sum. Therefore, the stronger the integrated fabric of the synthetic mining pool, the more value it has over the longer term.

FUTR is a *savings* token (ICOs, base trading pairs etc.)
FUTX is a *commerce* token (arbitrage, trading opportunities etc.)
MNY is a *membership* token (privileges)
COE is a *super-synthetic* token (redistribution of savings, profits and privileges)

Here is a visual representation of our integrated value model:

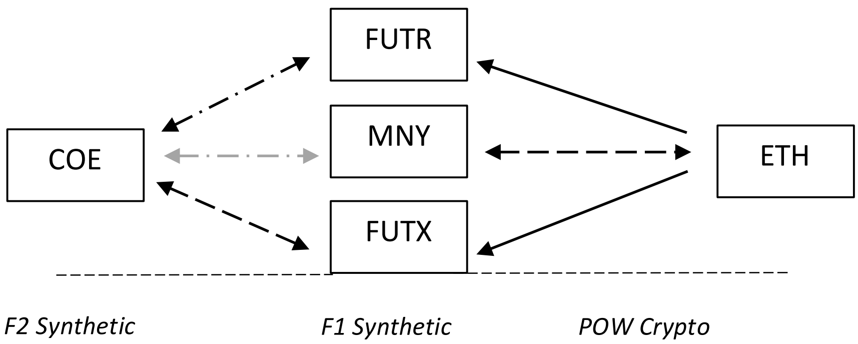


Synthetic Blocks
The horizontally-positioned lines between which POW and the synthetic products commingle, and the lines at which synthetic POV tokens swap with super-synthetic tokens we call *synthetic blocks.*

Synthetic blocks are grouped into levels, which are subsequently re-packaged into cycles. At the end of each cycle a swap-back is offered, but this can also result in a retention of the synthetic or super-synthetic.

In general, it is to be expected that the higher the retention ratio of synthetics is over the core POW unit of currency used within the value system at the end of every cycle, then the higher the demand for super-synthetic swaps.

Synthetic Chains
Synthetic chains refers to the nature of the synthetic in reference to its position to the underlying POW protocol. A super-synthetic is a synthetic chain; a synthetic is another synthetic chain. In other words, the synthetic chains are structures that exist behind the synthetic blocks and on top of the POW protocol. When synthetic chains are interactive synthetic blocks are dormant and vice-versa.



In the Factory Banking model, strong value demand anywhere internally fortifies other value components outwardly. In this example, a weak uptake in MNY by ETH holders is overcome by strong demand for FUTR and FUTX, which operate early coeval smart contract exchange functions for all three mid-chain smart contracts. This renewed demand by over-exposed FUTR/X buyers helps saddle up the MNY market in time which leads to a reliable form of self-correcting behaviour. N.B. that value blocks are inactive during periods wherein synthetic value chains are most active.

Phi-dimensions
Phi-dimensions is a term we ascribe to the conceptual-physical distance that exists between any two units of value that exists by a distance of phi apart from one another. The Factory Banking model proposed here is intended to be completely integrated so that the phi-dimensions between the model are equally apportioned to the Fibonacci upon which they run.

Thus, ETH and COE procures MNY and FUTR, MNY, FUTX combined when all fed with ETH produce integrated value via COE. The initial value is ETH therefore. Note that is nothing is mined it can have no value; if it is mined it automatically has value it beings onto this synthetically integrated “mining grid.”

Phi-dimensional ratios
This paper introduces the concept of phi-dimensional ratios. We are not sure whether or to what extent phi-dimensional ratios are an integral part of value modelling for payment technologies (or indeed any other form of market-based value modelling).

To create Phi dimensional ratios we posit that the algorithm should always begins with the Fibonacci and always refer back to the Fibonacci but should be inclusive of its own particular extension or retraction of Fibonacci mathematics.

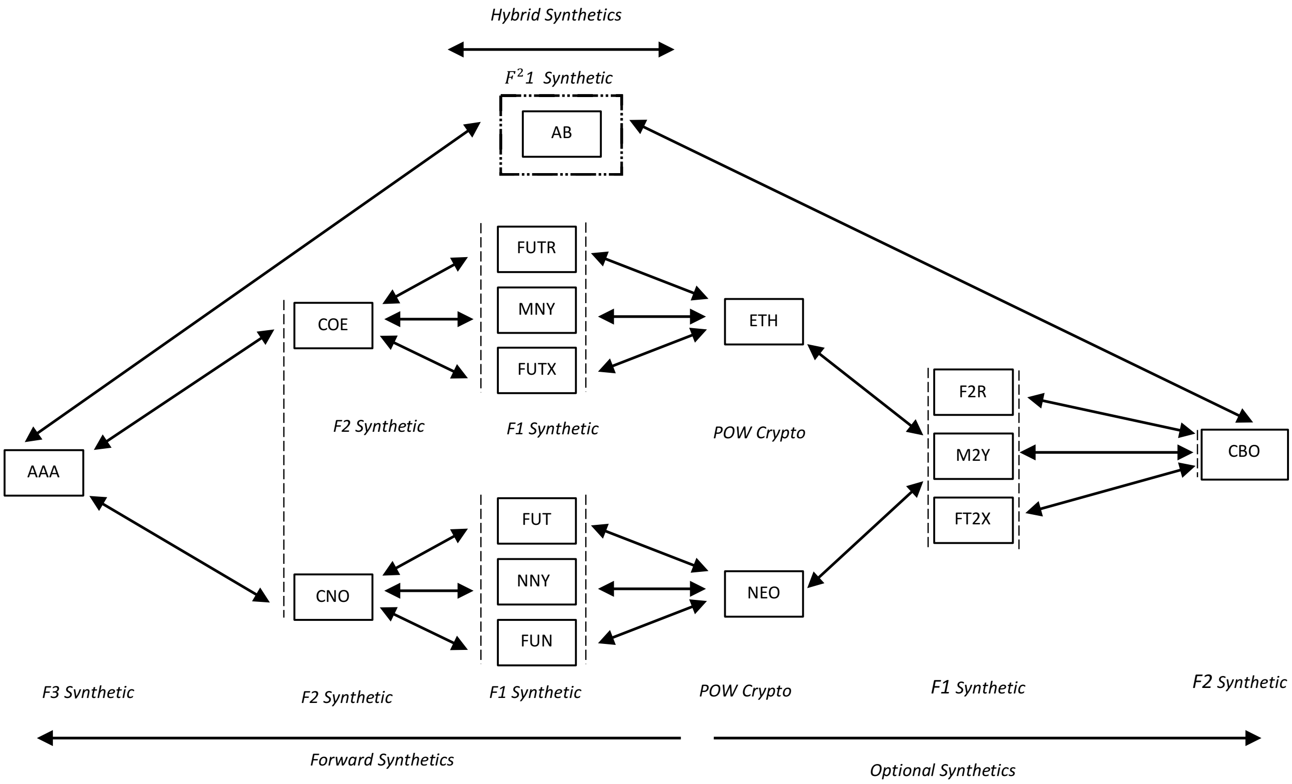
For example, in a Phi-dimensional algorithm wherein the first level is extended by 22% the resultant formula produces 139.08; then, in the second level, 0.78070157 is multiplied by this number since this is the phi-dimensional distance between 89 and 114:

Level	Phi	Extend/Retract	Phi-Ext1	Phi-ER1	Phi-ER2	Phi-ER3	Final Algo	FINAL ALGO R/A/S
1	114	22%	**139.08**	-	-	-	139.08	-
2	89		**108.58**	0.78070175	-	-	108.58	78%
3	55	-	**67.10**	0.61797753	-	-	67.10	62%
4	34	-55%	41.48	0.61818182	**18.67**	-	18.67	28%
5	21	-		0.61764706	**11.53**	-	11.53	62%
6	13	-	-	0.61904762	**7.14**	-	7.14	62%
7	8	-	-	0.61538462	**4.39**	-	4.39	62%
8	5	880%	-	0.62500000	2.745	**26.9**	26.9	613%
9	3	-	-	0.60000000	-	**16.14**	16.14	60%
10	2	-	-	0.66666667	-	**10.76**	10.76	67%
ALGO AVG %	**26.6**	**ALGO STDEV %**	**60.52**	**REAL AVG**	**41.03**	**REAL STDEV**	**47.672**	**121%**
ALGORITHM VARIANCE		**44%**		**REAL VARIANCE**		**86%**	-	**185%**

To ensure the algorithm is truly phi-dimensional, algorithm variance divided by the real variance of the resultant numbers in the final algorithm should always equal approximately 0.62, which is our closest pared ratio to Phi.

Because of the way in which the Fibonacci atrophic number series is coordinated relative to directional flow of value (i.e. it becomes gradually more expensive, then falls back and then gradually begins again to become dearer) it is our contention that Fibonacci is simply the most customised mathematics for value modelling that exists today. Phi-dimensional ratios become important when we begin to create multi-directional synthetic crosschains.

Synthetic Crosschains
Ultimately, multiple instances of synthetic Blockchains are possible utilising various smart Blockchain software and the core cryptocurrency on which the Blockchian being synthesised is hosted. These synthetic will Crosschains all contain various different F-layers and loops between forward and optional synthetic directions require a phi-dimensional algorithm calculation, since depending on cycle speed and other factors of the synthetic being wrapped inside the next F-layer, different synthetics will mature at different points in time.



In this extension of the Factory Banking model two core cryptocurrencies – ETH and NEO – give rise to a multi-token value structure wherein phi-dimensional equations will become important tools for regulating the value flow between blocks and multi-directional synthetic Blockchain. N.B. - synthetics work in reverse to real Blockchain protocols in that they combine values vs. divide them.

The maturity date of the various components of the subsequent F-layer synthetic structures may have a profound impact upon value realisation of the synthetic over large extents of time (i.e. years) as the roll-over fees begin to kick in. In such instances, faster cycle speeds can be addressed inside super synthetic structures with variations in the phi-dimensional algorithm used to value mine them.

Phi-dimensional algorithms may need not be confined to Synthetic Crosschains however. In the example above, take COE. Although the initial miners will get a spectacular payoff, without any extension of the algorithm around level 5, the true probability of profiting off value mining beyond that point would be slim in a foreseeable space of time unless the cycles were considerably shortened.