Settlement Price for Crypto Collateralized Futures

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Crypto Collateralized Futures

- An EMX futures contract is an agreement to buy or sell a commodity, index or crypto currency at a predetermined price at a specified time in the future, and collateralized by a margin deposit of cryptocurrencies.
- The EMX contracts are all cash settled where profit/loss is credited/debited to the holder's account as compared to a benchmark price computed by a publicly known methodology using public data.

Futures Market Mechanics

- Futures traded on EMX exchange
- Once a futures position has changed, margin must be deposited
- at the end of every funding period transfers are made between margin accounts based on settlement price
- if margin falls below maintenance level a margin call is made
- if margin account is not recapitalized part or all of position is liquidateds
- at maturity final transfer are made for cash settlement, no actual delivery

Settlement Price Benchmark

The objective of a settlement price is to provide a benchmark for settling future positions. The benchmark is required to satisfy the following conditions:

- **indicative** of the spot market fair value - the benchmark is derived from the spot price and representative of it
- **non manipulable** - cannot be easily manipulated to create artificial arbitrage opportunities
- **transparent** - computation of the benchmark can be verified using publicly available data
- **replicable** - the benchmark can be replicated through trading on the spot market with a publicly known strategy

Sourcing Data

- Cryptocurrencies
  - Libra pricing data
  - Coincap / Coinmarketcap
  - internally build sources for backup
- Oil
  - *TBD*
- S&P500
  - *TBD*

Benchmark Computation

- WMR Fix 10 min window
  - hard to manipulate
  - easy to replicate algorithmically
- VWAP 10 min window
  - hard to manipulate
  - harder to replicate algorithmically

Table: Benchmark Price

sym	bid	mid	ask
BTC/USD	3847	3848.5	3850
ETH/USD	107	108.25	109.5
S&P 500	279.30	279.55	279.80
Oil	73	74.13	75.5

Delivery

Libra will be required to deliver settlement prices such that:

- Delivery at the end of funding period
  - Futures - 24h
  - Perpetual Contract - 8h
- Latency
  - $\approx$ 5 minutes
- Delivery
  - API
  - FTP download
  - email file
- Quality of Service
  - 7 days a week
  - disaster recovery plan

Challenges Facing Evermarkets

- Liquidity Provision
  - At least until the futures market becomes liquid, the market will need to rely on an ion house dedicated liquidity provision team [?]
  - Having in house liquidity provider would require Evermarkets to hold a position, to avoid conflict of interest Evermarket has an interest to have a third party provide settlement prices
- Data Operations - 24/7 high reliability collection and distribution of data