Questionnaire - Stableunit

Questionnaire

Note: you can decline to answer certain questions (like marketing / go to market) which may be trade secrets and we will put in "declined to answer due to current trade secret".

a. General

i. **Which blockchain / DLT are you building on top of?**

StableUnit.org is base level protocol built mostly on Ethereum protocol source-code.

ii. **How does the stablecoin work?**

StableUnit - is a decentralized low-volatility cryptocurrency with multi-layer stabilization mechanism.

In a nutshell, the system uses different sets of stabilization mechanisms depends on how strong additional supply “pressure” at the moment. If market conditions are calm, the market stabilization if sufficient. If demand/supply ratio shifts beyond a certain threshold - next stabilization layer kicks in. And so on. Each layer has a different demand elasticity and works by enriching each other.

This model offers stabilization on a broader range of market conditions than other proposed models on the market. Read more in p. "multi-layer stabilization mechanism" of whitepaper

iii. What is the purpose of your coin? What does it aim to achieve, and which problems does it solve?

We don't make stableunit for sake of doing that. Our global vision:

1. Money should be **decentralized, private, and available for everyone.**
2. All of humanity, not just a small minority, should share the benefits and ownership of the financial system.
3. Personal secure possession of value in the form of money should be a **universal and inalienable human right.**

I came from a country where money became worthless twice in my short life and at least 5 times during the last century. Literally, no single generation, since mid 18 century, was able to pass inheritance in form of money. Imagine that, you work hard whole your life to save money. Life is harsh, the climate is bad, working conditions are terrible, corruption everywhere, you will get in jail if you protest. And because some motherfucker from the government is incompetent - you will lose everything. No retirement savings, nothing.

I came from a very poor family from the Ural mountains. I clearly remember my childhood, when my parents got paid by furniture and stamps which they were unable to use. So they barter it for cheapest flour to bake a bread. They couldn't afford to buy bread. No vegetables or meat. They worked on 6 acres of land to cultivate vegetables during the summer. And forest mushrooms on autumn. Soup with shells from local undrinkable river and potato was so good, that I still recall how good was the taste in comparison with our normal ration.

It was pure luck that I got a good teacher at the school and started to participate in math olympiads. With strong determination it eventually gave me a place in Russian team for international competition, a university degree in math, work at Facebook and Amazon and offers Google and others, the privilege to meet super intelligent people from IT and blockchain industries.

My parents aren't undetermined or lazy. They work very hard all their life. They couldn't rely on the economic system and unreliable national currency to get a better life. And that not an exception. We made a research and found that 9 out top 17 countries by population have unreliable national currencies (will publish next week). About half of the world's population can not rely on their national currencies. The blockchain is the technology which is able to change that if used right.

I'm with collaborators building this solution. Despite I'm extremely ideologically driven I acknowledge that the majority of people are driven by greed. And what's the beauty of the blockchain system - achieve global goals by utilizing people's desire for profit, the strongest motivation ever.

iv. When we say something is stable what do you think it means? And when it comes to monetary policy specifically?

stable (adjective UK /ˈsteɪ.bəl/) - firmly fixed or not likely to move or change. Cambridge Dictionary. However, in my subjective opinion, when people refer that something is "stable" they usually mean that something is easily predictable. "John has never settled, he is stable.". "Economical grow is very stable" etc. In other words, it doesn't require significant mental effort to make correct predictions. So this makes possible to set plans, work, investment etc and be safe about future. Stability => confidence => trust. I might be wrong though. For monetary policy, stability means that value possessed by tools of such system should remains predictable, ie system work as it designed. Saving accounts/bonds/ should have expected ROI, cash ideally should not change its value (here I'm writing from people's point of view, macro economical consequences from deflationary/firmly stable currency is separate topic), loans payment should remain as planned.

v. **What is your revenue model?**
    1. Share Appreciation & Dividends: Revenue is in the form of dividends - underlying ownership token has exposure to dividends in the case of over-capitalization of funds.
    2. Transaction Commission (Fees): The system design uses transaction fee as a self-sustainable revenue model in the long run.

b. Launch & marketing

i. **What does the market need to be confident in the stability of your token?**

High level of stability versus peg, including stability during market crash.

ii. **How are you bootstrapping to that level of confidence?**

No comment - proprietary at this time.

iii. **What are your go-to-market strategies?**

No comment - proprietary at this time.

c. Economics

i. **What is your coin stable with respect to?**

Pegged to the value of US dollar of January 2019 and adjusted for 1% inflation thereafter.

ii. **How much volatility can this peg withstand? Is that the same for upwards and downwards pressure? How wide is the band of behavior it can support?**

StableUnits are designed to withstand a very high degree of volatility. Multi-layered stabilization mechanism is able to withstand hour-to-hour volatility as well as black swan events.

There's unlimited liquidity for the upward pressure and dynamic guaranteed liquidity for downward supply pressure.

iii. **How easy is it to analyze the band of behavior from which it can recover?**

Fairly easy for the person with math skills, simulations will be released with new version of white paper.

iv. **How expensive is it to maintain the peg/stability mechanism?**
    1. **How transparently can traders observe the true market conditions?**

The stability mechanism rely mainly on a stabilization reserve. This fund is backed by Ethereum or Bitcoin and auditable by anyone who has access to a block explorer.

v. **Which monetary theory (theoretical) assumptions do you think are not true and how does your protocol account for that?**

It is believed that as Bitcoin grows in value, Bitcoin will "stabilize itself" in terms of value. We do not believe this to be true in so far as other markets, like the much larger gold market are more stable than Bitcoin but still quite unstable in price when compared to USD. This also applies to Ethereum assuming it too has a fixed

monetary supply with declining inflation. StableUnits aim to take advantage of this by providing a cryptographically based response to the stability found in US dollars.

vi. **Does your stablecoin supply scale in response to demand? If so, how?**

StableUnits are designed to have a high degree of scalability and will be limited only by the capacities of the underlying protocols.

vii. **Who provides the capital to maintain exchange rate peg? How are they compensated / Why do you think they would continue to lock up capital, given other investment opps?**

The only way to acquire SU is to buy it for crypto which goes to stabilization reserve.The system provides a stabilization reserve to maintain exchange rate peg.

The SU foundation is made up of SU DAO token holders which benefit from owning tokens in the form of appreciation of token value, dividends and other revenues from transactions. The returns from excess reserve fund should be sufficient to ensure continued holding of SU DAO tokens.

viii. **An eventuality plan in case of a "black swan" event.[1,2] The 1% case will happen eventually.**

The multi-layered stabilization mechanism explicitly designed that black swan events do not affect SU's stability.

d. Tech

i. **Are any novel consensus mechanisms used, over and above the underlying blockchain?**

In addition to issuing SU, DAO tokens are used to provide voting mechanism for administering edits to the protocol.

ii. **What transaction throughput can the blockchain currently handle and how does it plan to scale? Do its plans coincide with your plans for your estimated demand?**

MVP utilise very limited ERC20 bandwidth. Full implementation mostly inherits Ethereum protocol bandwidth. Majority of the future scalability solutions for Ethereum can be merge for StableUnit.

iii. **What tradeoffs does your protocol make and why did you make those tradeoffs? (supply/demand, temporarily peg breaking) (censorship resistance) (privacy tradeoffs) (accuracy of present market data and ease of manipulation of the data feed protocol uses (responsiveness of market and ease of manipulation)**

The most important aspects of StableUnits are stability and censorship resistance. These are the two aspects that we believe are necessary to compete with US dollar for reserve-currency status.

We do not have any trade offs, except complexity of the system.

iv. **Are there any centralized components of your system? Would any of these be easy for govs to shut down?**

1. **Tech:** The MVP of protocol operates in a decentralized way as it is based on the Ethereum blockchain.
2. **Gov:** The foundation will be a DAO and physical presence located in a several non-cooperative jurisdictions. That offer protections to founding members so it too will be hard to censor. Majority of team members are remote based.

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[1] https://en.wikipedia.org/wiki/Black_swan_theory

v. **Does your protocol require information outside the blockchain such as a feed of price data? If so, how does this oracle work? Who manages it, what are the incentives for managing it, and what happens if the data they provide has a glitch?**

Yes, the system utilized oracle system. Oracle system is very resilient, and use evolutionary transition from Makers Dao Dai's style model to fully decentralized, during the time.

Please read white paper for additional information. p "Oracles System"

vi. **Which participants can see which transactions? What is the data and metadata available, and to whom? How does this impact privacy?**

Trading of SU and SU DAO tokens will generally take place on exchanges. This data will presumably be available to the exchange and may be aggregated and re-sold as per those exchanges' privacy policies. SU DAO tokens will also be visible on Ethereum block explorer.

vii. **Are you doing anything with formal verification? Smart contracts used?**

Repos and SU DAO tokens implemented on smart contracts. We do have strong white-hat in our core team + friends with formal verification software from Zurich uni.

I also mathematically prove expected stability and volatility, which makes it verification (model checking) of the stabilisation mechanism (unless you use marketing buzzword for the term).

viii. **What is the rebase period? (Length of time between currency adjustments.)**

Price of assets adjusted every 6 hours or 5% move whichever occurs earlier.

Rebase period (or period of time when the protocol is re-calibrated to peg will be 1 year initially and defined by the DAO consensys later.

ix. **Can we make this automated?**

1. **Do we use a smart contract, or network rules of the blockchain operators?**

It's automated. See comment on oracles (section v.)

e. Regulation

i. **What are your perceptions of local and global regulation in supporting stable coin, asset backed token economies?**

Local: Securities regulators in North America are openly adversarial to token generation events. Our goal is to comply with all local regulations by avoiding those jurisdictions where issuance may be a security. For our initial funding we are using accredited investors.

ii. **What could be done to improve regulation in terms of speed, quality, value for your company?**

Provide future rounds of financing for development.

f. Testing

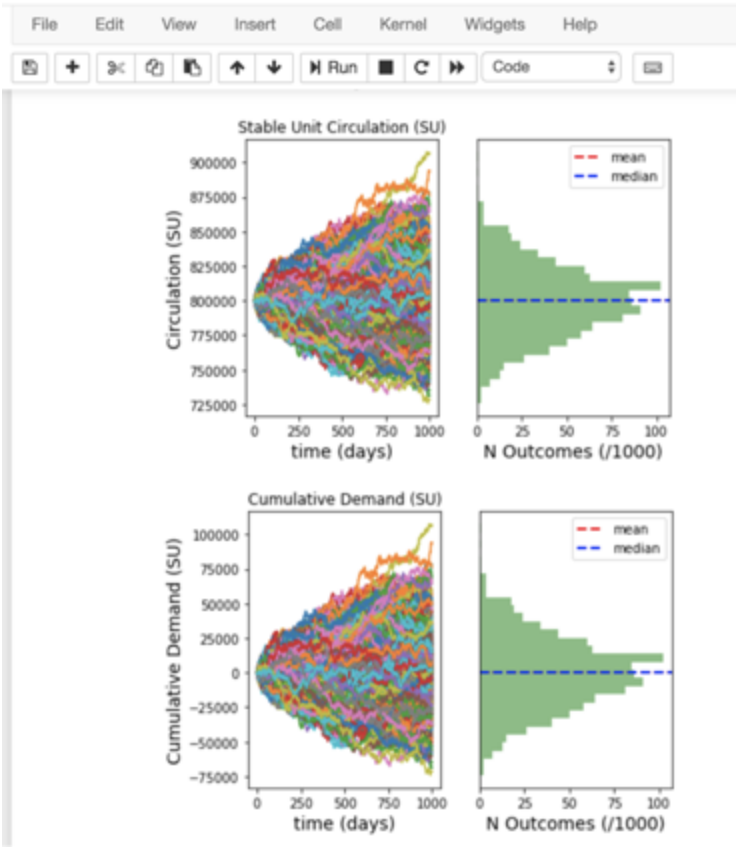
i. **What kind of simulations have you done and what have they helped you learn? (simulating broad array of market conditions)**

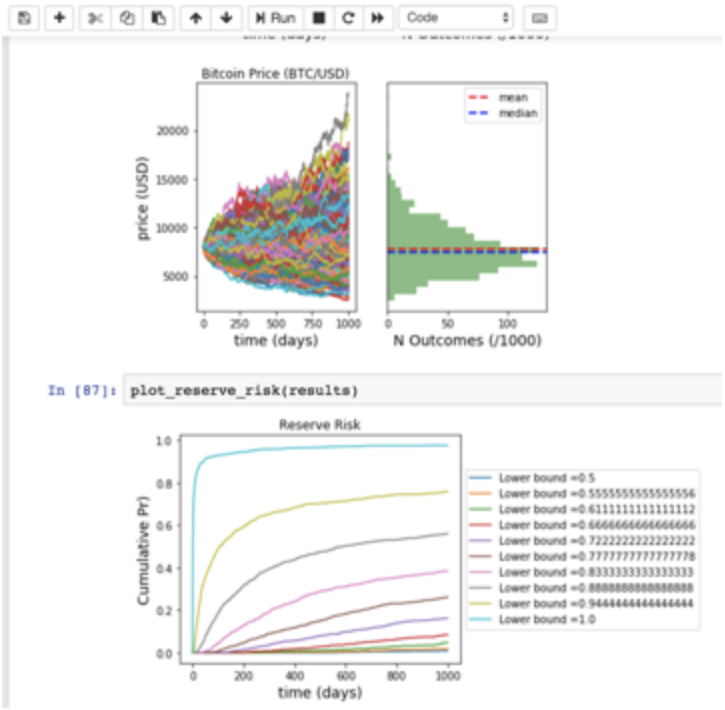
1. **Mental models for simulations**

One of the stabilization mechanisms is arbitrage. Under normal circumstances, it is assumed - and easily demonstrated - that people will act rationally and operate in their self-interest to arbitrage tokens in order to help ensure that pegged tokens remain stable. Please see whitepaper.

2. **Econometric models**

Monte carlo simulation of crash risk during black swan, and mathematical expectation of the price and volatility. Please see Mathematical problem formalisation in the whitepaper.

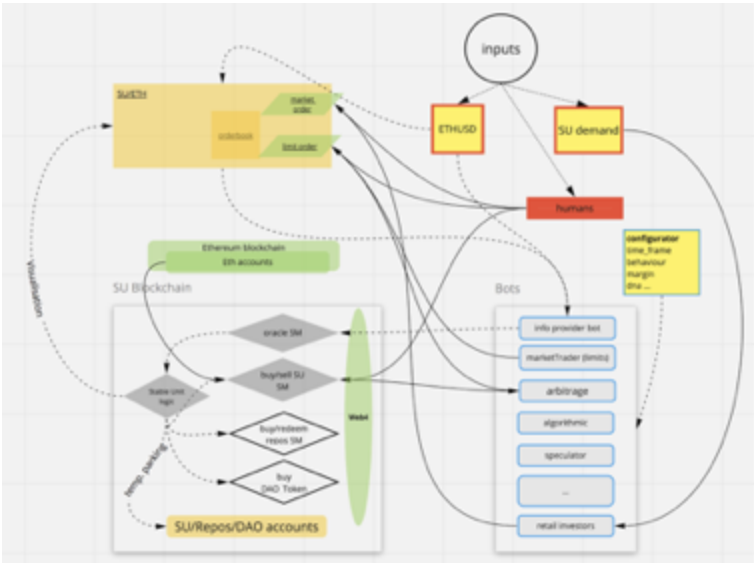




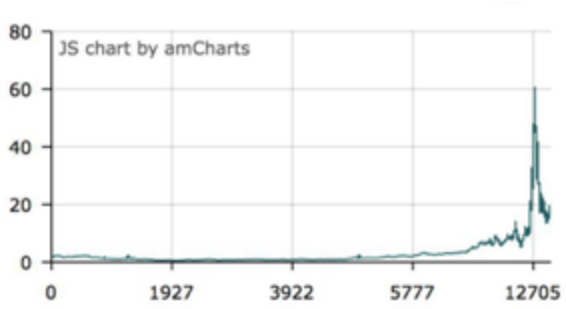
3. Agent-based Modelling / Computer simulations

Simulations only available only to investors at this time.

In a nutshell, simulation give you an opportunity to see how system responds on changing price of assets in stabilization reserve (Ether for MVP) and market demand for SU buy utilizing system of intelligent agents (bots):



The simulation, despite seeming simplicity, is an advanced tool (which was rewritten from scratch 3 times). If we turn off all stabilisations and minter of new units (making it effectively just a finite supply coin) simulation is able successfully to show expected market behaviour without any historical data whatsoever! Look (telegram channel for additional detail):



4. **Other (Please describe)**

   We tried numerous different approaches to prove how system perform during market volatility. Basically Monte Carlo and agent-based simulation are sufficient for formal prove that SU and more stable than other approves, so we are focusing on MVP right now. Any other prove can by dune upon mathematical formalism model, so I just quote it here from whitepaper.

We define the price as stochastic process **price(SU(init_conf, inputs))[t] ⟶ ℝ,**

where:
SU(init_conf, inputs) - statement of the StableUnit system with initial configuration and all external inputs such as price of assets in reserve and demand for SU.

init_conf = {stabilisation_conf, oracle_conf, Peg(t)} - initial configuration which specifies all parameters of the System,
stabilisation_conf = {Δs, Δb, Δd, Δp, f_reserve_sell(), f_reserve_buy()} - configuration of the multilayer stabilisation mechanism, see Multilayer Stabilization paragraph for detailed explanation of this parameters.

oracle_conf = {oracle1, oracle2, Δt, w[t, C], max_delta_price} - configuration of the oracle,
oracle(crypto)[t$_i$]⟶ ℝ - function which determines current market price of the crypto asset,
Δt, w[t, C], max_delta_price - additional configuration parameters, see paragraph Oracle system to additional information,
Peg(t) - target for the sort peg,
inputs = {reserve_assets, market_demand} - dynamic inputs to the System,
reserve_assets = crypto$_1$ … crypto$_n$, crypto$_i$ - asset held in reserve,
market_demand(SU)[t] - function which represents the accumulated market demand for SU at the moment of time

Using this definition, decentralized cryptocurrency is stable **if and only if** the mathematical expectation (mean value) is equal to peg:

E(Price(SU)[t]) == Peg(t).

Our goal is to design such a system that SU price fluctuation i.e. variance (expectation of the squared deviation of a random variable from its mean) of the prices will be minimum:

Var_max→min: **Var(Price(SU(init_conf, inputs))[t]) < Var_max**,
for ∀ **inputs ∈ {acceptable_inputs}** and ∃ **init_conf.** Such *init_conf* is called the **optimal configuration** and *Var_max* **- expected price fluctuation** for the particular design of the System.

Without loss of generality, assume pegged value is equal to 1 USD. Also, for simplicity, let Stabilization Fund store only ETH and measure all exchange prices directly in USD($), however real exchanges happen in SU/ETH and USD/ETH.

So it can be programmed in Matlab or Wolfram fairy easy for any task.