# Report Algo Stablecoins April 2021

# Lemnîscap



### In collaboration with:

Dan Dubokovič Daniele Montagnani Gianmarco Guazzo Le Tuan Dinh

# **INTEGRATION**

# # OF DEFI PROTOCOLS ACCEPTING THE TOKEN

MARKET DESIGN IMPORTANCE SCORE 8.5

Terra Money	Terra has built a strong alliance in the Asian region, including partnerships with TicketMonster eCommerce and food delivery. To date, Terra has partnered with over 15 platforms that have an overall \$25 billion in annual transaction volume and 45 million users	Total Score: 59.5
FRAX	Frax has established 12 integrations both in the decentralised space (such the one with Curve) and in the centralised space (Binance)	Total Score: 73.1
Reserve	Reserve is currently integrated with Uniswap, Kyber Network and 1Inch	Total Score: 47.6
Ampleforth	Ampleforth is currently integrated with 3 DeFi protocols	Total Score: 45.3
Empty Set Dollar	ESD is currently integrated with Balancer, Cream, Saffron.finance, Uniswap, Sushiswap, Basis Gold, Curve Finance and Arth Coin	Total Score: 54.4
Debaseonomics	Debaseonomics is currently integrated with DeFi DEXes and 80MPH	Total Score: 55.2
Basic Cash	Basis cash is in talks with 4 protocol for integration such as DERI, MARS, SCRT, and SAN	Total Score: 36.1
Dynamic Set Dollar	The protocol has 2 integrations to date	Total Score: 34.0

# **QUANTITATIVE DATA**

# **MARKET DESIGN**

	Total Supply on Exchanges	% addresses with holdings over top 15% of holding size and daily vol	% tokens being transacted daily (like the velocity of token)	# of steps required to get 1 stable token	# of steps required to get 1 governance/native token
FRAX	95%	57%	0.057	3	Buy on Uniswap
Reserve	N/A	N/A	N/A	N/A	N/A
Ampleforth	30%	3.10%	0.02285	Buy on Uniswap	Buy on Uniswap
Empty Set Dollar	5.60%	3.15%	0.00105	Around 10	Around 10
Debaseonomics	0.00032%	31%	0.000456	4	4
Basic Cash	N/A	N/A	0.00416	Buy on Uniswap	Around 3
Dynamic Set Dollar	20%	9.40%	0.0005405	Buy on Uniswap	Buy on Uniswap

# **DECISION MAKING**

# **HOW ARE PARAMETERS CHANGED?**

MECHANISM DESIGN IMPORTANCE SCORE 7.8

Terra Money	Parameters are changed through on chain governance proposals. These proposals are created on the network by depositing some Luna tokens. In order for the proposal to pass, consensus must be achieved through a community vote	Total Score: 57.4
FRAX	Frax is community-governed but emphasises a highly autonomous, algorithmic approach with no active management	Total Score: 61.1
Reserve	Parameters can be changed by the Reserve Manager, which keeps the Reserve stable at \$1 and by the Vault Manager, which manages the assets in the Vault. The Reserve protocol is still in its first of three phases where it will pass from centralised to decentralised	Total Score: 54.8
Ampleforth	Ampleforth parameters can be changed upon discussion, proposal, targeted and onchain signaling, and is finally implemented by the Ampleforth foundation multi-sig	Total Score: 31.3
Empty Set Dollar	The protocol smart contracts can be changed in any way necessary by proposing a new version to the DAO. Some requirements are needed for any proposal: 0.5% ownership of the liquidity in ESD	Total Score: 57.2
Debaseonomics	Each governance token allows a user to propose new protocols or vote on changes proposed by other users. Initially, 1% of all the DEGOV tokens in supply is needed, and for a proposal to pass, a quorum of 10% of the current DEGOV token supply needs to be reached	Total Score: 50.9
Basic Cash	Basis Cash intends to operate as a DAO and whoever is staking BAS can change the parameters of the protocol	Total Score: 56.8
Dynamic Set Dollar	Nothing has changed so far but Governance can change parameters. There is a re-shuffle going on at the moment which will introduce a new token and change substantially the mechanism. Token holders can propose changes. The threshold is set to at least 1%	Total Score: 54.8

# **DECISION MAKING**

# WHAT PARAMETERS CAN BE CHANGED?

### MECHANISM DESIGN IMPORTANCE SCORE 7.8

Terra Money	Different parameters can be changed through different types of proposals: ParameterChangeProposal to change key parameters of the blockchain, TaxRateUpdateProposal to update the Tax Rate Monetary policy lever, RewardWeightUpdateProposal to update the Reward Weight monetary policy lever, CommunityPoolSpendProposal to decide on spending from the distribution module of the community pool. Last but not least, more complex changes can be proposed through a text proposal	Total Score: 48.3
FRAX	The only parameters that are up for governance through FXS are adding/adjusting collateral pools, adjusting minting/redemption fees, and refresh rate of the collateral ratio	Total Score: 59.5
Reserve	The main parameters that can be changed are the diversification across asset classes that back the peg, the Vault ratio and the Vault Portfolio	Total Score: 52.8
Ampleforth	Technical parameters and changes to the protocol can be proposed and discussed via AIPs / ACCPs which are formal documents that describe the proposed change	Total Score: 52.8
Empty Set Dollar	Any parameter of the protocols can be changed, as the code itself can be modified	Total Score: 53.2
Debaseonomics	What DEGOV offers a user is wide ranging control of governance parameters as well as rebasing parameters. This framework gives users an unprecedented level of control to find the best solutions to stabilise DEBASE (and thus, elastic supply tokens) in the long run	Total Score: 50.9
Basic Cash	Pretty much everything is now under proposal. New emission of BAS, new split of BAS emission, new migration plans to Curve, and new dynamics for re-peg of the protocol	Total Score: 58.7
Dynamic Set Dollar	Technically, the design right now is completely under construction again. The community is working on a major restructuring under the proposal DIP 10	Total Score: 51.9

# **STRUCTURE**

# PEG VERIFICATION/ORACLE USED: HOW IS THE \$1 PEG VERIFIED

### MECHANISM DESIGN IMPORTANCE SCORE 7.3

Terra Money	In Terra, miners submit a vote for what they believe to be the current exchange rate in the target fiat asset. Every n blocks the vote is tallied by taking the weighted medians as the true rates	Total Score: 40.3
FRAX	The peg is verified using Uniswap ETH, USDT, USDC time-weighted average prices and Chainlink (USD price) oracles	Total Score: 60.8
Reserve	The protocol relies on so-called reporters that are initially programs running outside the Ethereum Blockchain and inside a secure, trusted execution enclave. Initially, the protocol will rely on self-built oracles. However, decentralised oracle (ChainLink) will be used in the future	Total Score: 49.8
Ampleforth	Ampleforth uses its own oracle and Chainlink retrieving a 24hr average weighted price	Total Score: 36.7
Empty Set Dollar	Empty Set Dollar uses Uniswap to verify its price	Total Score: 52.8
Debaseonomics	Uses Uniswap V2 as oracle once every 24h, to compare with the price of DAI. If prices diverge by more than 5% the system rebases its supply	Total Score: 42.1
Basic Cash	Every 24 hours, the time-weighted average of the BAC-DAI exchange rate is read from the Uniswap v2 contract, which is then fed into the Basis Cash protocol to be referenced by its stability mechanism	Total Score: 52.5
Dynamic Set Dollar	Dynamic Set Dollar used Uniswap to verify it's price	Total Score: 51.3

# **STRUCTURE**

# STABILISATION METHOD: ARBITRAGE TRADERS

MECHANISM DESIGN IMPORTANCE SCORE 8.2

Terra Money	Terra: The Terra network achieves price stability by algorithmically adjusting its supply based on fluctuations in demand. Once it detects that a Terra stablecoin has deviated from its peg, it will apply pressure to correct the deviation. Terra protocol prints as much stablecoin or Luna as necessary until the peg for each asset is satisfied. The protocol serves as a market-maker for Terra/Luna swaps	Total Score: 62.6
FRAX	Can be minted/redeemed for \$1 so as to balance demand/supply on the open market caused by arbitrageurs	Total Score: 62.0
Reserve	If the price is above peg arbitrageurs are incentivised to purchase newly minted tokens for \$1.00 worth of either collateral or Reserve Rights tokens and sell them on the market. If below peg, arbitrageurs can buy and redeem it with the reserve smart contract for \$1.00 worth of tokens	Total Score: 62.8
Ampleforth	Every 24 hours there is a rebase and an arbitrage opportunity should appear on exchanges (Uniswap and centralised exchanges), as the rebase affects the DEX pool as well, meaning that the Uniswap price should be close to 1, while other exchanges which do not use the pool model will lag behind and present an arbitrage opportunity in either direction	Total Score: 46.9
Empty Set Dollar	There is no arbitrage pricing in place	Total Score: 52.8
Debaseonomics	Debaseonomics encompasses an infinite variety of elastic supply tokens by proposing stabiliser pools which can be programmed in unique ways to try to incentivise DEBASE holders to stabilise the token price over a number of cycles, in a process mediated by governance. These pools attempt to solve some of the biggest issues faced by such coins, including incentivising pegging of DEBASE to target during negative rebases	Total Score: 57.1
Basic Cash	It is currently broken as there is not enough demand for bonds (there is no confidence in the protocol gaining peg) and the cash in BAS is completely idle. Also, there is currently no incentive to hold BAS during a contraction phase	Total Score: 30.6
Dynamic Set Dollar	In supply extension, newly minted DSD go to DSD holders that have bonded their DSD inside the DAO. The remaining 40% go to Liquidity Providers. This was thought to create enough demand for speculators (not arbitrageurs) but it did not work as expected	Total Score: 53.1

### **MONETARY POLICY**

# DYNAMICS AND STIMULUS IF ABOVE OR BELOW \$1

### MECHANISM DESIGN IMPORTANCE SCORE 8.7

Terra Money	When the price of 1 TerraUSD < \$1, the user can send 1 TerraUSD into the system to receive LUNA corresponding to \$1. When the price of 1 TerraUSD > \$1, the user can send LUNA (worth 1 TerraUSD) into the system to receive TerraUSD	Total Score: 67.9
FRAX	The collateral ratio refresh function in the protocol can be called by any user once per hour. The function can change the collateral ratio in steps of 0.25% if the price of Frax is above or below \$1. When Frax is above \$1, the function lowers the collateral ratio by one step and when the price of Frax is below \$1, the function increases the collateral ratio by one step	Total Score: 66.7
Reserve	When below peg: If the price of Reserve on the open market is \$0.98, arbitrageurs will be incentivised to buy it up and redeem it with the Reserve smart contract for \$1.00 worth of collateral tokens.  When above peg: If the price of Reserve on the open market is \$1.02, arbitrageurs will be incentivised to purchase newly minted Reserve tokens for \$1.00 worth of either collateral or Reserve Rights tokens, and immediately sell them on the open market	Total Score: 66.7
Ampleforth	There are two principal rebase math functions: (1) It calculates the price difference between the "ideal price" USD\$1 and the actual exchange rate now (e.g. US\$1.15). Then it mints more tokens, so that the price goes back down to US\$1; (2) It does not do this suddenly, token changes happen over a period of 10 days. We call this supply smoothing	Total Score: 58.5
Empty Set Dollar	ESD rebalances in two different ways. If the price of ESD is above 1\$ an expansionary monetary policy is needed. Newly minted ESDs are distributed in three ways: converting coupons for ESD, burning ESD to redeem outstanding debt and pro rata distribution to ESD holders. In order to shrink the money supply, coupons redeemable under defined circumstances are issued. They are issued at a premium so they represent an investment and incentivise ESD holders to lock their holdings	Total Score: 34.7
Debaseonomics	There are 3 main features: (1) If the price difference between DAI and DEBASE initially is more than 5% in either direction, this triggers a rebase event. Above the 5% threshold, the supply expands. Below the 5% threshold, the supply contracts.  (2) smoothing parameter (Rebase Lag) over configurable ranges that is applied in-order to dampen supply changes during a rebase. This flexibility prevents the protocol from increasing or decreasing the supply too fast if suitable to circumstance.  (3) Creation of new stabiliser pools (SP). Think of them as new monetary policies proposed by the central bank to adapt to new changes of the system. After all, incompleteness of contract is a risk, and creation of new SP reduces this risk directly	Total Score: 62.8
Basic Cash	When in contractionary, Basis Bonds can be bought from the protocol in exchange for Basis Cash. Price is set algorithmically and bonds are sold off promising bond holders a premium when redeemed. Purchased bonds can be converted to Basis Cash, insofar as the preconditions are met and the Treasury is not empty. In Expansionary Policy the system mints new Basis Cash tokens. The issued Basis Cash is either deposited to the Treasury or the Boardroom, depending on the Basis Cash balance of the Treasury.	Total Score: 58.5
Dynamic Set Dollar	As market demand for DSD increases, the price of DSD increases above the 1 USD peg, which causes new DSD to be minted, increasings the overall supply of DSD. In the event of supply extension, 60% of the newly minted DSD go to DSD holders that have bonded their DSD inside the DAO, while the remaining 40% return to Uniswap Liquidity Providers/Oracle. DSD features a built-in debt market that handles supply contraction phases (DSD price < \$1). Once debt is created, DSD holders can burn their DSD to acquire Coupons at discount. Coupons will be redeemable for newly minted DSD during a supply expansion event	Total Score: 45.5

# **QUANTITATIVE DATA**

# **TOKEN DESIGN**

	from inception, % days are above \$1?	% days below \$1?	since inception, how many days off \$1 mark	how many days is it unpegged?	Max number of consecutive days pegged
Terra Money	25%	74%	10	5	9
FRAX	62%	38%	82	0	78
Reserve	2%	3%	312	2	5
Ampleforth	38%	38%	147	13	32
Empty Set Dollar	35%	37%	30	10	10
Debaseonomics	62%	38%	6	19	2
Basic Cash	31%	57%	11	16	2
Dynamic Set Dollar	16%	80%	4	30	10

# **MONETARY POLICY**

# WHERE IS THE VALUE OF INFLATION COMING FROM?

Terra Money	Inflation comes from more transactions on Terra's network, hence attracting more LUNA as validators. Or LUNA appreciates in value due to other external factors	Total Score: 69.3
FRAX	New tokens are backed by Collateral + FXS shares, which is the native token that, combined with collateral, fully backs the stablecoin	Total Score: 69.3
Reserve	New token emissions are supported by collateral + Reserve Right Tokens to fully back to value	Total Score: 70.2
Ampleforth	Newly minted coupons that can be obtained by burning ESD and are priced at a discount to ESD. They represent a claim on future ESD that's minted	Total Score: 54.9
Empty Set Dollar	New inflation is minted by the system and is deposited in favour of the Treasury and the Boardroom which are pools where buyers of BAS/BAB (bond) can access excess liquidity	Total Score: 30.3
Debaseonomics	DSD token holders can burn their DSD to acquire coupons at a discount, depending on the debt ratio. Coupons represent the right to newly minted DSD when the system is in expansion	Total Score: 47.6
Basic Cash	Newly minted coupons along with staking tokens in the stabiliser pools	Total Score: 58.6
Dynamic Set Dollar	New tokens are simply minted and deposited directly into the wallets	Total Score: 30.3

### **MONETARY POLICY**

# RISK MANAGEMENT LEVEL OF POLICIES AND MITIGATION

Terra Money	Terra's stablecoin can be backed by LUNA and the general off-chain demand of stablecoin transactions. Thus, risk is diversified in the off-chain ecosystem and less correlated to price volatility in onchain world	Total Score: N/A
FRAX	"The biggest risks on Frax are USDC blacklisting. There is a plan to diversify into other stablecoins. Nearly half of the USDC is deployed into AAVE, Compound, and Yearn. A second risk is a "Bank run" where everyone is redeeming at once	Total Score: 63.3
Reserve	To minimise the risk that a sudden drop in the prices of Vault assets reduces the Vault level to below the Vault Target, the protocol uses three types of diversification: 1. Diversification across asset classes, 2. Diversification across issuers, 3. Diversification across jurisdictions	Total Score: 67.4
Ampleforth	Ampleforth have insured LPs through Nexus Mutual up to a substantial amount of ETH	Total Score: 45.2
Empty Set Dollar	The protocol wants to implement an emergency shutdown via its Dao. The Improvement Proposal is currently under scrutiny	Total Score: 47.3
Debaseonomics	The risks of the protocols are mitigated by the different behaviours of the stabiliser pools	Total Score: 55.5
Basic Cash	We could not find public information which indicates that the project has not risk mitigation policies in place, but they might be working on them now	Total Score: 37.1
Dynamic Set Dollar	We could not find public information which indicates that the project has not risk mitigation policies in place, but they might be working on them now	Total Score: N/A

### **PLATFORM ACTIVITIES**

# INSTRUMENTS IN THE SECONDARY MARKET AND RETURNS ON MORE RISKY INVESTMENT VEHICLES (E.G. COUPONS TRADABLE IN A SECONDARY MARKET)

Terra Money	LUNA is a secondary token in the protocol. It is used as a protocol layer token to validate transactions and can be used to back the value of the stable coins in the protocol	Total Score: N/A
FRAX	The system does not include product or instruments in the platform. The only risky asset is FXS. The FXS token's market capitalisation should be calculated as the future expected net value creation from seigniorage of Frax tokens in perpetuity, the cash flow from minting and redemption fees, and utilisation of unused collateral	Total Score: N/A
Reserve	The system does not add any new instrument but there are collateral tokens and other assets that are held in smart contracts. Many of the collateral tokens will be tokenised real-world assets such as tokenized commodities, currencies, and securities	Total Score: 58.3
Ampleforth	Ampleforth has not introduced any new instrument to be traded in secondary markets	Total Score: N/A
Empty Set Dollar	Stablecoin and the governance token (represented by the same erc-20) are tradable on secondary markets. Coupons are managed by the contract and not complying with erc-20, they are tradable in a market managed on the protocol itself	Total Score: 38.3
Debaseonomics	The creation of new stabiliser pools (SP) is like a new monetary policy proposed by the central bank to adapt to new changes of the system. After all, incompleteness of contract is a risk, and creation of new SP reduces this risk directly. Assets held in the stabiliser pools include coupons, tokens, gov tokens, and investment in other protocols	Total Score: 42.2
Basic Cash	Basis Cash introduces Bonds and Shares. They currently have little traction because of the poor combination between mechanism and incentives and an overall lack of confidence in the peg. Bonds are now extremely risky (though they do not have an expiration, because they cannot be redeemed till BAC is back above the peg)	Total Score: 43.4
Dynamic Set Dollar	DSD utilises coupons that can be purchased when below peg. Coupons have proven to be a failed approach to recover the 1\$ peg. This is mostly caused by the pricing of the coupon being too static due to the fact that the duration they are held is completely neglected. Coupons (debt) face an expiry of 360 epochs after purchase. The debt ratio in DSD is capped at 35% which implies a max. premium of ≈46%. The risk for the coupon (bond) buyer is to buy coupons and never be able to redeem them due to the peg being below 0 for all the 360 epochs	Total Score: 34.5

### **PLATFORM ACTIVITIES**

# **NEW INFLATIONARY AMOUNT: WHO IS ENTITLED TO IT?**

Terra Money	Two participants: 1. Arbitrageurs: they absorb a portion of the new inflation. 2. Miners: when demand increases, the system mints Terra and earns Luna in return. The system burns a portion of earned Luna, which makes mining power scarcer. The remaining portion goes to the Treasury	Total Score: 68.7
FRAX	No rebase, no new inflation. Stablecoins are collateralised by 1) collateral 2) native token. At any time you can mint/redeem	Total Score: 63.3
Reserve	New tokens that are mined by the protocol to rebalance the quantity in the Vault remain within the Vault. When the price of RSV is below \$1 the protocol (Manager) buys RSV for tokenised assets that are added to the Vault bringing the value back to the peg	Total Score: 62.5
Ampleforth	Every token holder gets additional tokens in their wallet upon expansion (and vice versa), also the ones in LP pools	Total Score: 58.3
Empty Set Dollar	Of newly minted tokens, LPs get 20%, Treasury 2.5%, the rest goes to either DAO or Coupon holders	Total Score: 25.0
Debaseonomics	Debase token distribution depends on the stabiliser pools and the various monetary policies in place. New SPs can be created when approved by the community. As of now, the 1st pool is a DAI/Debase staking pool and is distributed based on stakers, until 10,000 tokens are distributed. The 2nd pool follows similarly to the 1st pool, until 25,000 tokens are distributed. The 3rd pool requires users to stake their tokens and assets with 88MPH, a third party, to earn yields, debase tokens and 88mph tokens. SP4 is currently being designed	Total Score: N/A
Basic Cash	New BAC go in proportion to BAS (shares) holders and in the BAC/DAI vaults. If BAC exceeds \$1 even after bond redemption, the treasury mints new Basis Cash seigniorage which is given to the Boardroom. Users can stake Basis Shares and earn daily seigniorage based on the BAC price	Total Score: 52.1
Dynamic Set Dollar	In expansion: 60% of the newly minted DSD will return to DSD holders that have bonded their DSD inside the DAO. 40% return to Uniswap Liquidity Providers/Oracle	Total Score: 47.8

ROI

# DUAL TOKEN, SPECULATION AND VALUE ACCRUAL

Terra Money	LUNA is a governance token and is used to back the value of stable coins in the Terra network. When price falls due to lower demand, the value of LUNA is used to back the value of stable coins	Total Score: 64.0
FRAX	Frax Shares (FXS) is the governance token that accrues fees, seigniorage revenue, and excess collateral value. The FXS token's value is determined by the demand for Frax. The value that accrues to the FXS mkt cap is the sum of the non-collateralised value of Frax's market cap	Total Score: 63.3
Reserve	The Reserve Protocol holds the collateral tokens that back the Reserve token in smart contracts. When new Reserves are sold on the market, the assets used by market participants to purchase the new Reserves are placed into these smart contracts to be held as collateral. This process keeps the Reserve collateralised at a 1:1 ratio even as supply increases	Total Score: 67.4
Ampleforth	Ampleforth is planning to launch a governance token called \$FORTH. However at the time of writing, no information is available	Total Score: N/A
Empty Set Dollar	ESD does not have a second token designed to accrue value from the protocol's dynamics	Total Score: N/A
Debaseonomics	Degov is a governance token used to vote on improvement proposals and policies to improve the stability mechanisms of the token. It also enjoys a proportion of the protocol fees earned	Total Score: 55.5
Basic Cash	Basis Shares profits directly from the recent creation of Basis Cash, provided that the Treasury is sufficiently full. Holders of Basis Share tokens can claim a pro-rata share of Basis Cash tokens accumulated to the Boardroom contract. Basis Shares are also distributed to those that provide liquidity in Uniswap pairs. The goal was to provide a strong financial incentive for network bootstrapping, boosting adoption via network effects	Total Score: 37.1
Dynamic Set Dollar	DSD does not have a second token designed to accrue value from the protocol's dynamics	Total Score: N/A

### **DISCUSSIONS**

### **ECONOMIC EXPLOITS**

### **Economic misalignment**

Economic decisions for the individual at the expense of the overall economic viability of the protocol, affecting system stability

#### Asymmetry of economic opportunity

The allocation of tokens to early adopters accumulates large amounts of the tokens in their hands which they can then use to rig the market in their favour

#### Reallocation of risks to other agents

When risk is often shifted from one segment of participants to another, dangerous dynamics are created to the detriment of the protocol

#### Incentives sustainability

The incentives designed to improve system stability have often failed, such as in the cases of coupons and bonds

### Negative feedback loop

Phenomenon in which participants have no incentive to keep the system stable

#### Speed of reactions

Systems and incentives are not responsive enough to market forces, often failing to react in a timely manner to price changes

### PRICE VOLATILITY

#### Price sensitivity to large holders

Investors are big enough to move the market, forcing the price downward to buy more coupons, then forcing it higher to make a profit

#### Risk management

How these protocols consider the secondary risk other than price volatility

### Secondary financial instruments: are participants getting a good deal?

Protocols often add enormous complexity and idiosyncratic risk to any participant who wants to interact with the protocol

### Secondary assets and value accrual

Is a dual token system actually good for the goal of achieving optimal system functionality, or are there more effective solutions?

### **TECHNICAL RISK**

#### Attack vectors

What are the possible attack vectors faced by the system and the protocols and why this matters

### **RECOMMENDATION**

### **ECONOMIC EXPLOITS**

#### Balancing early adopters and price stability

One method of starting a stablecoin ecosystem is to attract investors and users into the system. So it is very important to create a healthy community with as fair a distribution as possible

#### Dynamic response to price actions

Algorithmic stablecoins have the advantage of being able to react immediately, predictably, and accurately to changes in demand and other possible events. For this approach to work, the moving parts of the algorithms need to be tuned for the real market in which they operate, which requires more fluidity and dynamism over epochs and blocks

### **PRICE VOLATILITY**

### Inflationary token

Protocols have invented various ways to add value when the price of their token falls, some more successfully than others. Manipulating the supply is certainly easier for the protocols. But, as we can see from the results of our peg analysis, this often does not work

### Secondary token to promote stability

The governance token should provide a return regardless of the accuracy of the peg at that time, e.g. as compensation for voting on the protocol or to stabilise it

### Risk management

Some alternative solutions in cryptocurrency markets could be protocol emergency shutdowns through governance mechanisms. The emergency shutdown could be triggered by some predetermined event (such as a price drop) or voted on by a quorum of protocol token holders

#### Token demand

Price of tokens is defined when the token supply meets the token demand. The token demand is dependent on the usability of the token. Other than focusing on the token monetary policy, managing token demand is crucial

### **TECHNICAL RISK**

#### Oracle management

Most protocols use just a single AMM integrated oracle, namely the UNISWAP TWAP oracle. This does make sense, given the limited representation on centralised exchanges, but it does present a single point of failure. Oracles are so integral to the functioning of stablecoin protocols that they cannot afford such a risk