

Stablecoins

СЧАСТЬЕ НЕ ЗА ГОРАМИ



Sergey Ivliev,
Lykke, Perm State National Research University
Perm Summer School 2018

'Good money' fundamentals



- Store of value
- Medium of exchange
 - Durable
 - Divisible
 - Fungible
 - Portable
 - Relatively scarce
 - Resistant to counterfeiting
- Unit of account
 - Price discovery
 - Price signalling
- Privacy
- Censorship resistant
- Adoption / network effect
- Scalability

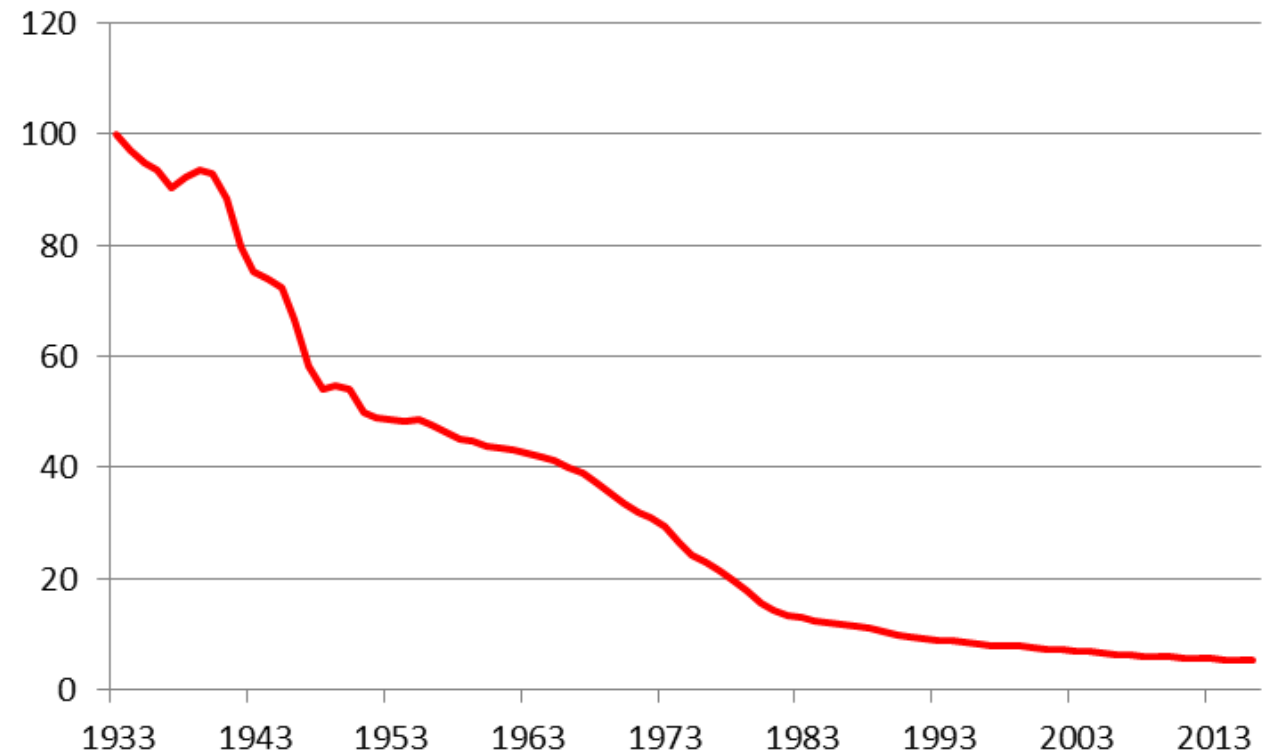
US Dollar



- Short-term stable: **0.18%** 90-d volatility to basket (SDR)
- Store of value: **>63%** of currency reserves
- Payment method: **>50%** of payments (SWIFT)
- Unit of account of choice

...but

- Long term halving every **20** yrs
- Not private (except for cash)
- Not resistant to censorship
- Not suitable for microtransactions



Fiat currencies

- **27 years** average life expectancy of a fiat currency
- **20%** failed through hyperinflation, **21%** destroyed by war, **12%** destroyed by independence, **24%** were monetarily reformed



Good golly, Miss Bolí!

Venezuelan bolívar to the \$

Implied PPP* conversion rate, inverted log scale



Sources: McDonald's;
The Economist

*Purchasing-power parity, based
on *The Economist's* Big Mac index

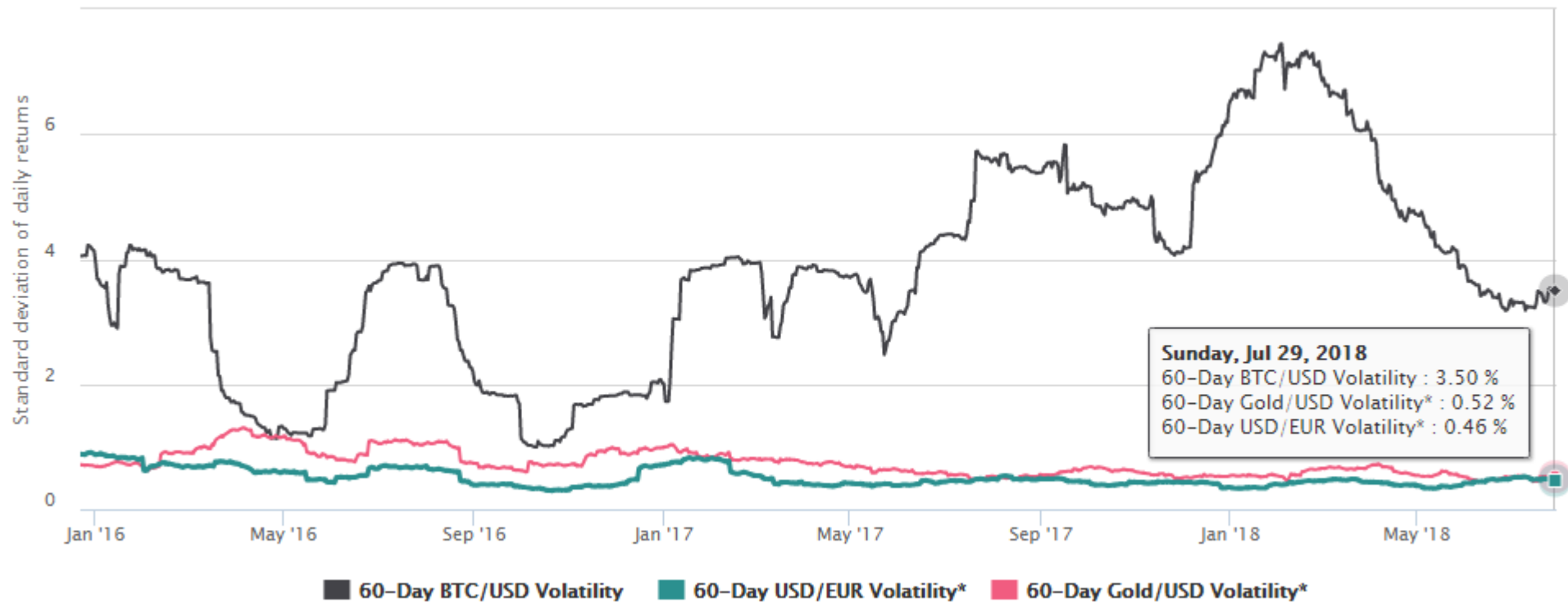
Cryptocurrencies



- Consensus on emission (minting, mining)
- Fast (but probabilistic) finality, cost of 51% attack defines upperbound
- Not much scalable: **<10-15 tps**
- Market adoption is growing: **>100m** cryptocurrency users... but not mainstream
- Expensive to transact when network is congested (especially micropayments)
- Bubble-crash price dynamics

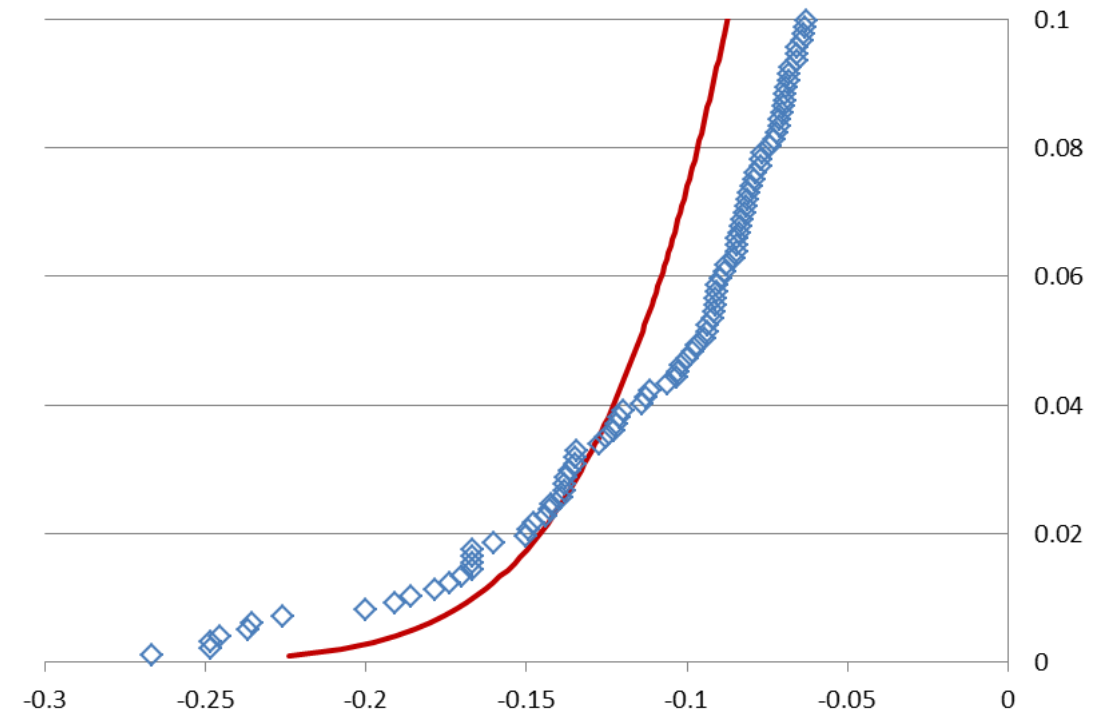
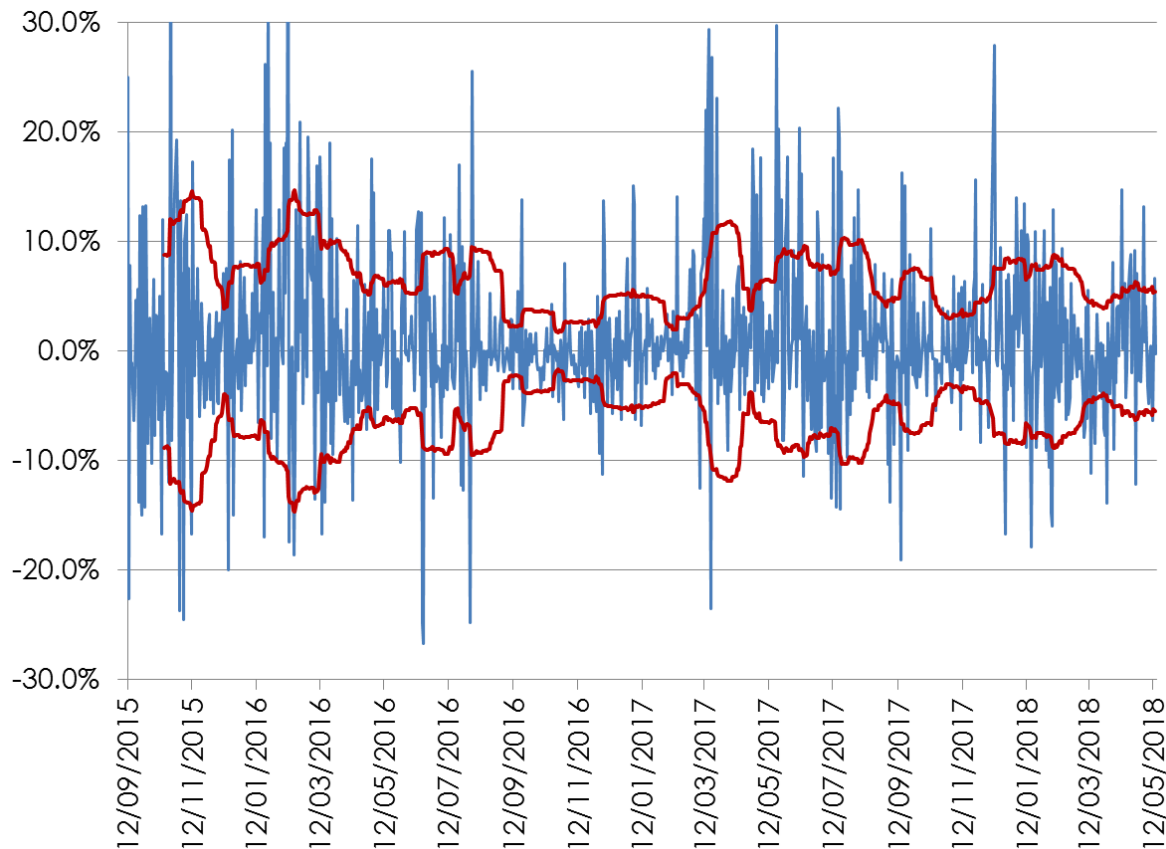
Cryptocurrencies

- **3.5%** 60-d volatility of BTC/USD, up to **7%** and more (>**100%** annual)
- **2x-10x** compared to EUR/USD or Gold
- Other ccs are even more volatile



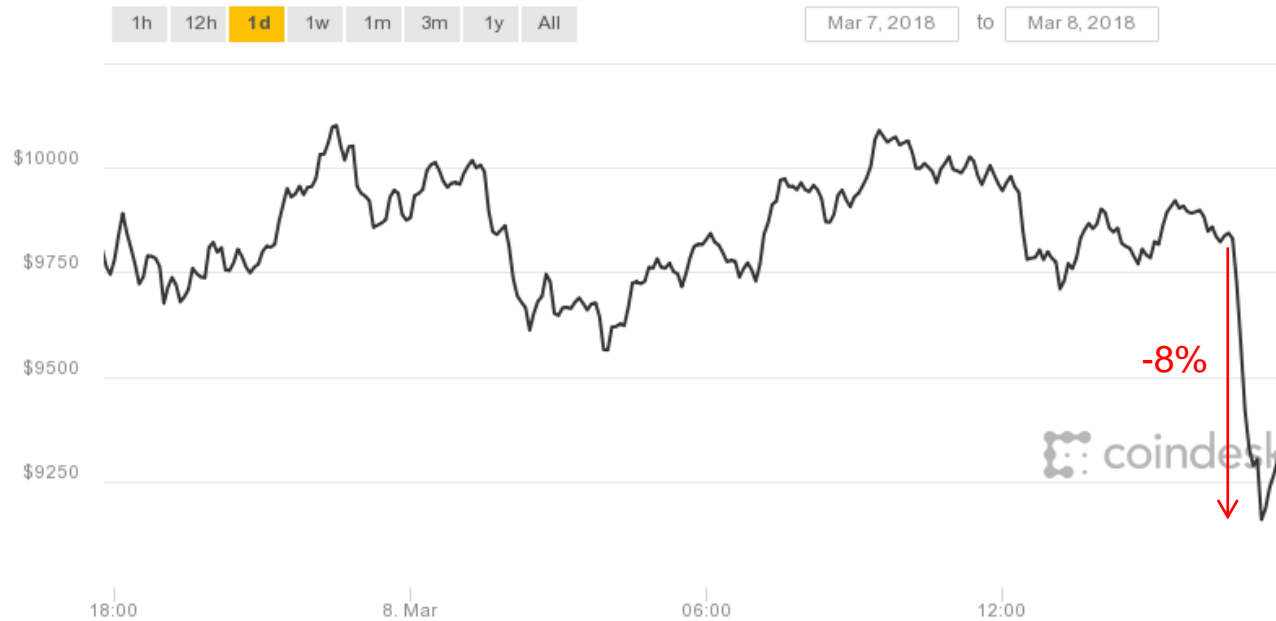
Cryptocurrencies

- Other ccs are even more volatile
- **7.5%** sample std.dev for ETH returns, **8.2%** sample volatility for Bitshares, etc.
- Heavy tails: **3x** sigma price drops are pretty frequent



Cryptocurrencies

- Intraday price jumps (shocks) are severe: **>10%** in less than 1 hour

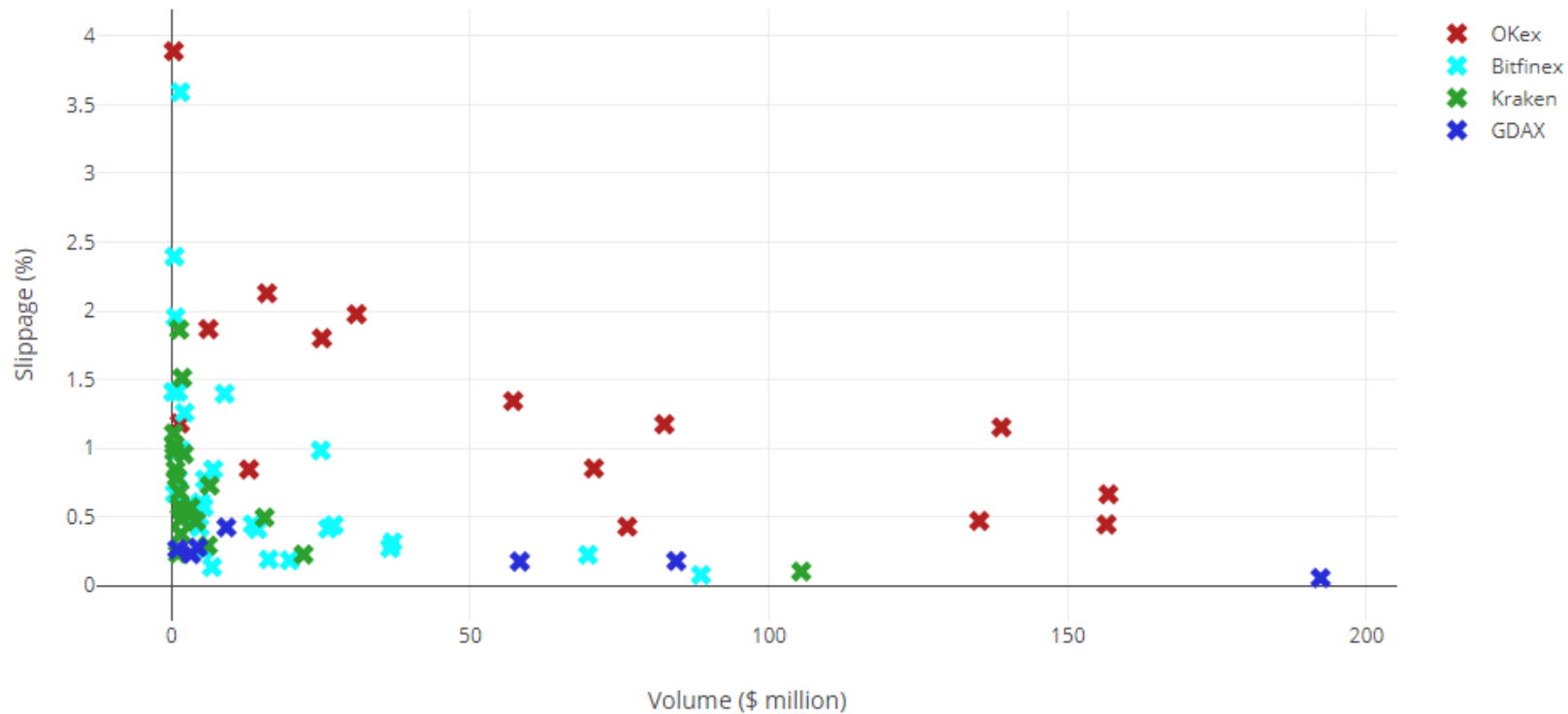


Cryptocurrencies



- Liquidity is spurious on many exchanges (slippage > **0.25%** for \$50k order)

Slippage = f(Volume), OKex, Kraken, Bitfinex, GDAX



Stablecoins

Must have's

- Price stability (low volatility)

Nice to have's

- Transparent structure and governance
- Little counterparty/ tail event risk
- Fiat gateway
- Market liquidity
- Scalability
- Privacy
- Censorship resistance
- Adoption

Stablecoins




- Centralized IOUs (e.g. Tether, TrueUSD, etc.)
- Decentralized collateral-backed (e.g. Bitshares bitUSD, MarketDAO DAI, etc.)
- Algorithmic-stable coins (e.g. Basis)

Centralized IOUs

Tether



- Symbol: USDT
- Issuer: Tether International Limited
- Most popular stablecoin
- Launched in 2014 (Realcoin)
- Colored coin (OMNI protocol)
- Redeemable for fiat (Kraken, OTC)
- Ties with Bitfinex

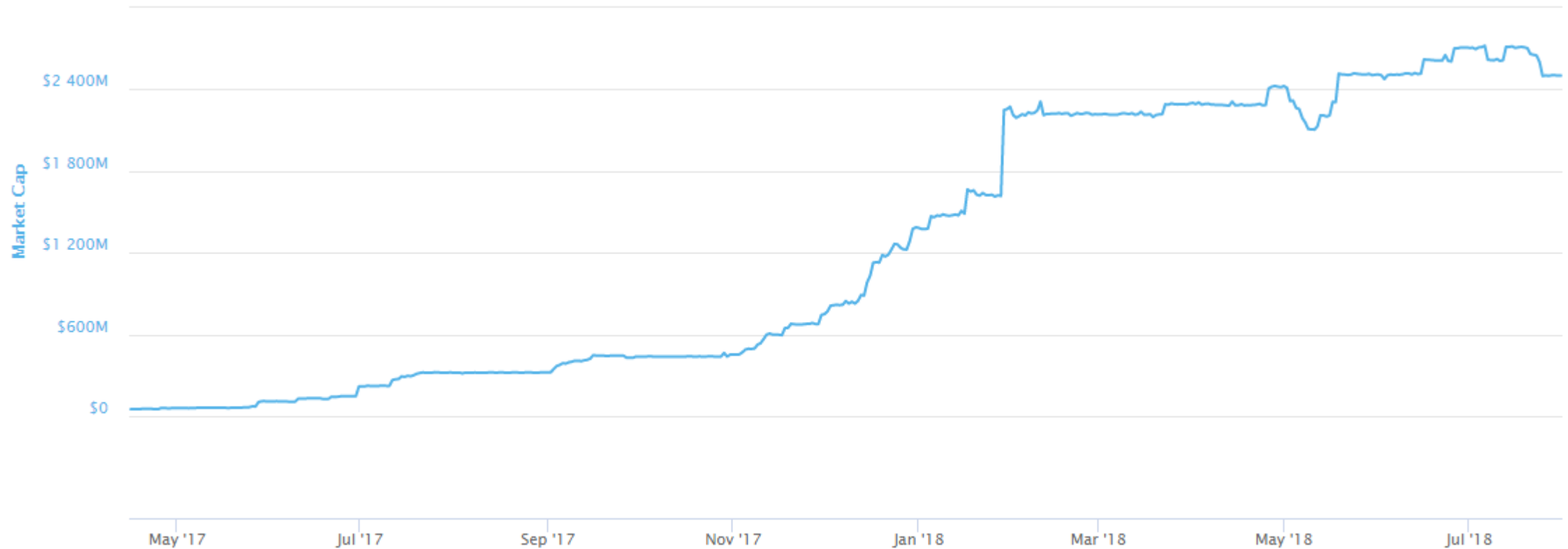
	TetherUS created by 5ed3694e8a4fa8d3ec5c75eb6789492c69e65511522b220e94ab51da2b6dd53f
Total	3,020,000,000.00 Tokens
Name	TetherUS
PropertyID	#31
Created	10/6/2014 9:39:15 PM
Data	The next paradigm of money.
Sender	3MbYQMMmSkC3AgWkj9FMo5LsPTW1zBTwXL
Category	Financial and insurance activities
Divisible	True
URL	https://tether.to
Raw Data	Click here for raw info

Centralized IOUs

Tether



- **\$2.5B** USDT in circulation

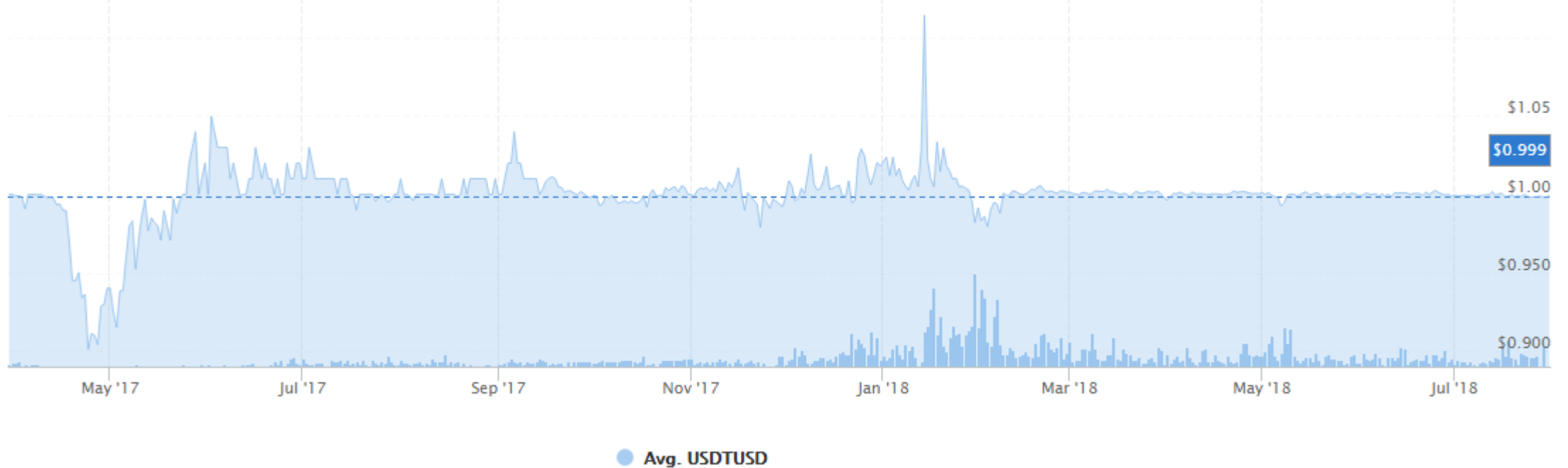


Centralized IOUs Tether



- **2.58%** 3m-volatility of USDT/USD, **25.8%** max drawdown

D:-0.02% L/H:0.901 / 1.11 V:\$687.23 M



Centralized IOUs Tether



- Proof of reserve

USD₿	
Total Assets	\$2,508,665,722.36
Liabilities (Tether in Circulation on Omni)	
Total Authorized	\$3,020,000,000.00
Less: Authorized but not issued	- \$510,960,153.48
Less: Quarantined Tether	- \$30,950,010.00
Liabilities (Tether in Circulation on Eth)	
Total Authorized	\$60,109,502.10
Less: Authorized but not issued	- \$108,983.00
Total Liabilities	\$2,538,090,355.62
Shareholder Equity	-\$29,424,633.26

<https://wallet.tether.to/transparency>

MONITOR AND REVIEW:

Pursuant to the above terms of Engagement, and the discretion provided by Tether, FSS selected the date of June 1st, 2018, and received the following balance information from Tether's two banks as of the close of the banking day. FSS received the following confirmations from the respective banks by sworn and notarized statements provided by duly authorized personnel.

BANK 1: \$1,968,538,584.82 USD (unencumbered)

BANK 2: \$576,528,652.00 USD (unencumbered)

TOTAL: \$2,545,067,236.82 USD

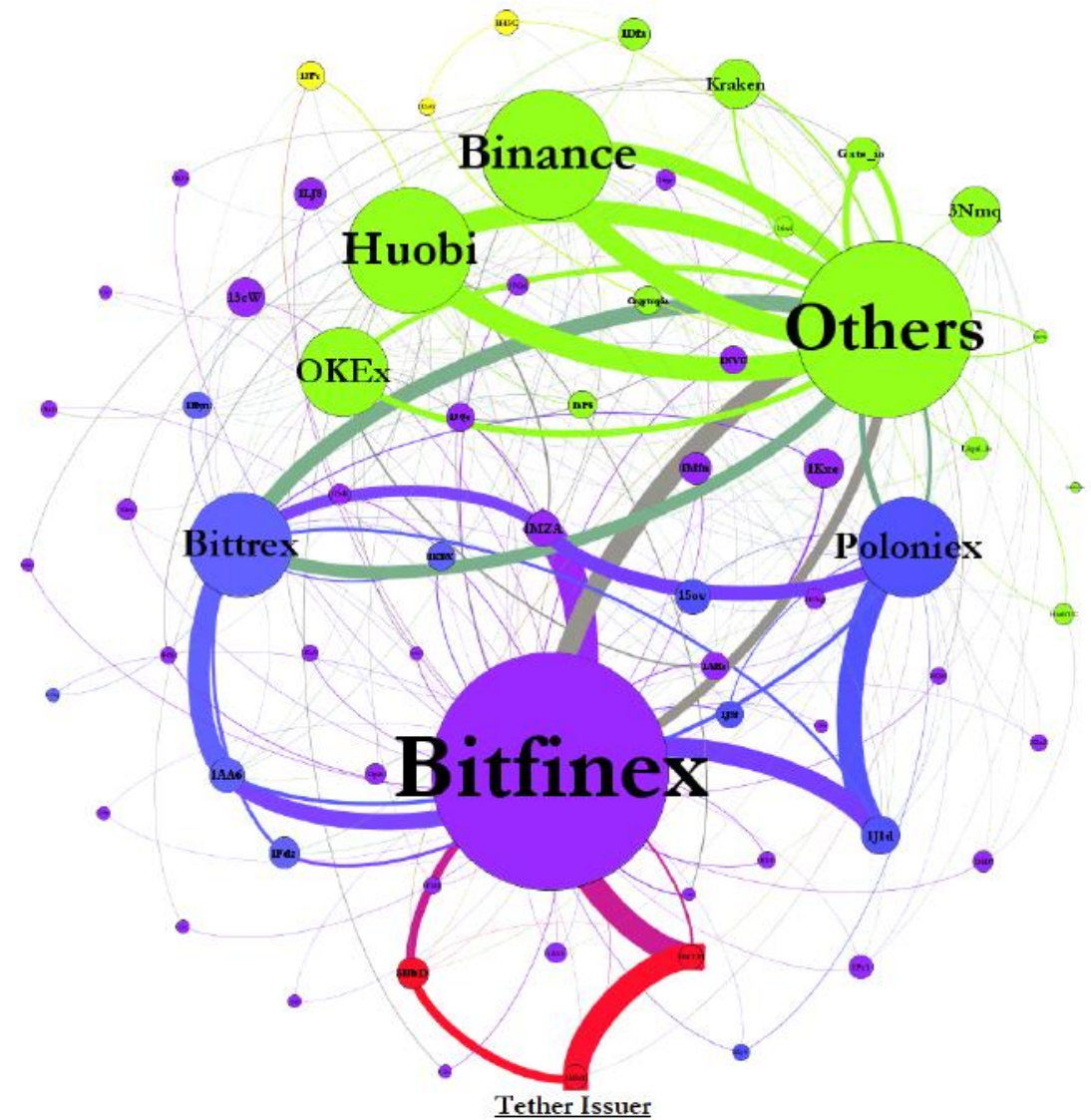
In conjunction with receiving the above balance information, FSS requested the Chief Financial Officer and the General Counsel of Tether to certify, by sworn statement, the amount of fully-backed USD Tethers that were in circulation as of the close of business on June 1st, 2018. The amount certified to FSS was \$2,538,090,823.52 USD Tethers. According to Tether's transparency page (<https://wallet.tether.to/transparency>), the amount of fully-backed USD Tethers in circulation as of June 1st, 2018 was equal to \$2,538,090,823.52 USD Tethers. FSS did not provide the Tether personnel with any advance notice, nor did FSS provide Tether the account balance information gathered from the two banks prior to receiving the Tether balance information.

<https://tether.to/wp-content/uploads/2018/06/FSS1JUN18-Account-Snapshot-Statement-final-15JUN18.pdf>

Centralized IOUs

Tether

- Aggregate flow between major addresses
- USDT are issued at private address
- Sent to Bitfinex
- Bittrex and Poloniex are close allies

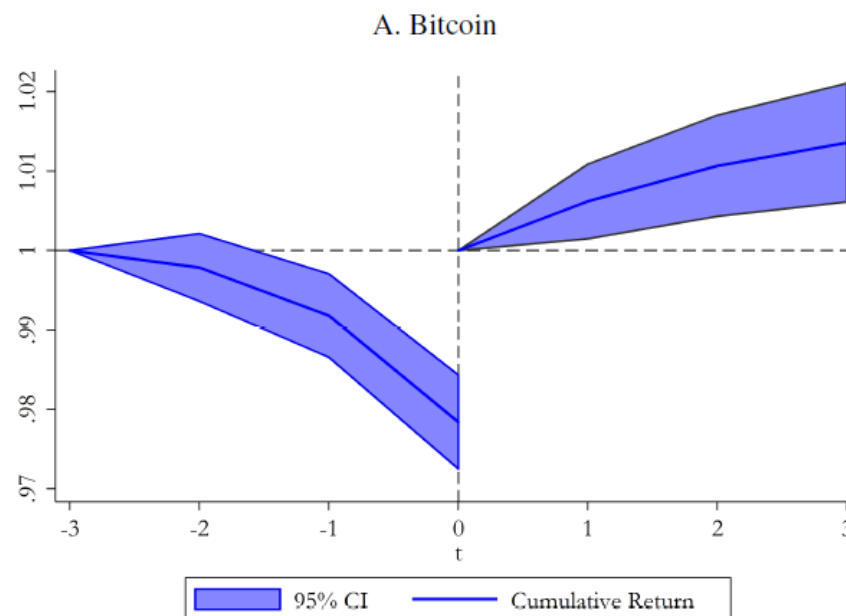


Griffin, John M. and Shams, Amin, Is Bitcoin Really Un-Tethered? (June 13, 2018). SSRN: <https://ssrn.com/abstract=3195066>

Centralized IOUs

Tether

- Controversy: “Less than 1% of hours with such heavy Tether transactions are associated with 50% of the meteoric rise in Bitcoin and 64% of other top cryptocurrencies.”



Griffin, John M. and Shams, Amin, Is Bitcoin Really Un-Tethered? (June 13, 2018). SSRN: <https://ssrn.com/abstract=3195066>

Centralized IOUs TrueUSD



- Symbol: TUSD
- Issuer: TrueCoin LLC
- Launched in 2018
- ERC20 token
- Redeemable for fiat (>\$10k)
- Collateral is held at escrow account
- Audited by professional firm



Backers

a16zcrypto

BLOCKTOWER

DISTRIBUTED
GLOBAL

foundation
capital

FOUNDERS FUND

GGVCAPITAL

JumpCapital

SIGNIA VENTURE

SLOW
VENTURES

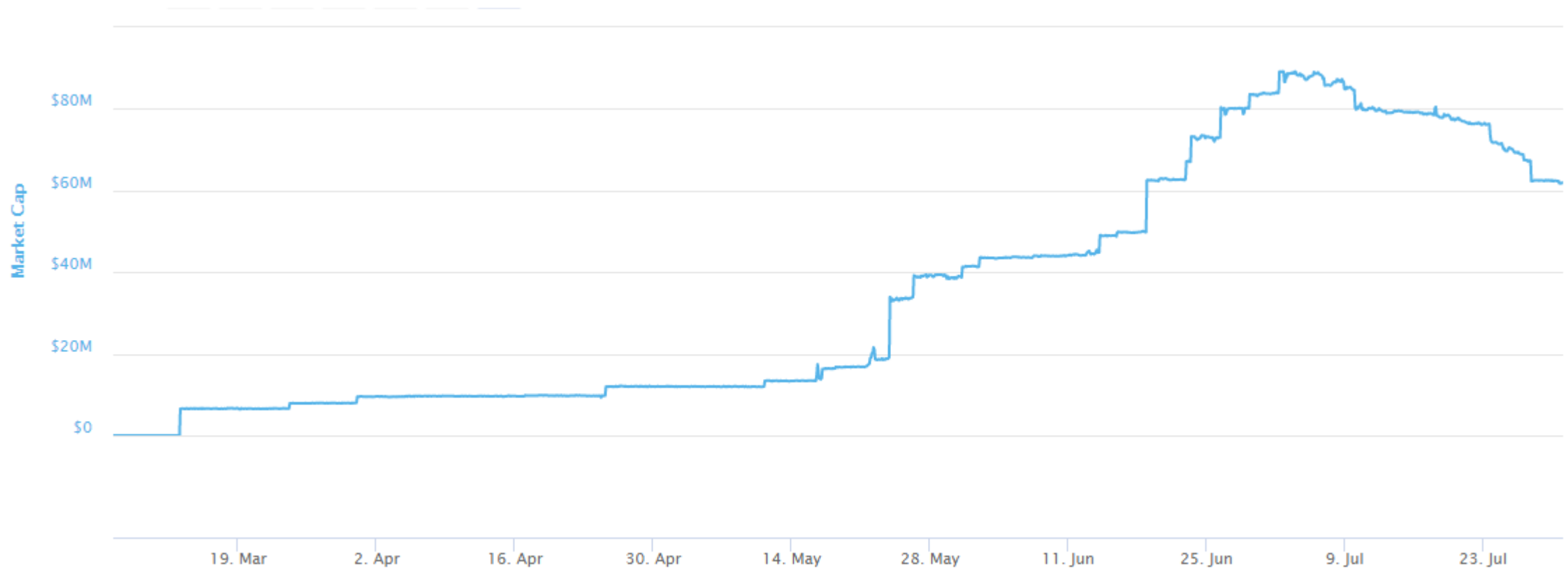
Stanford
University
Stanford-StartX Fund

ZhenFund
真格基金

Centralized IOUs TrueUSD



- **\$61M** TUSD in circulation



Decentralized collateral-backed BitUSD

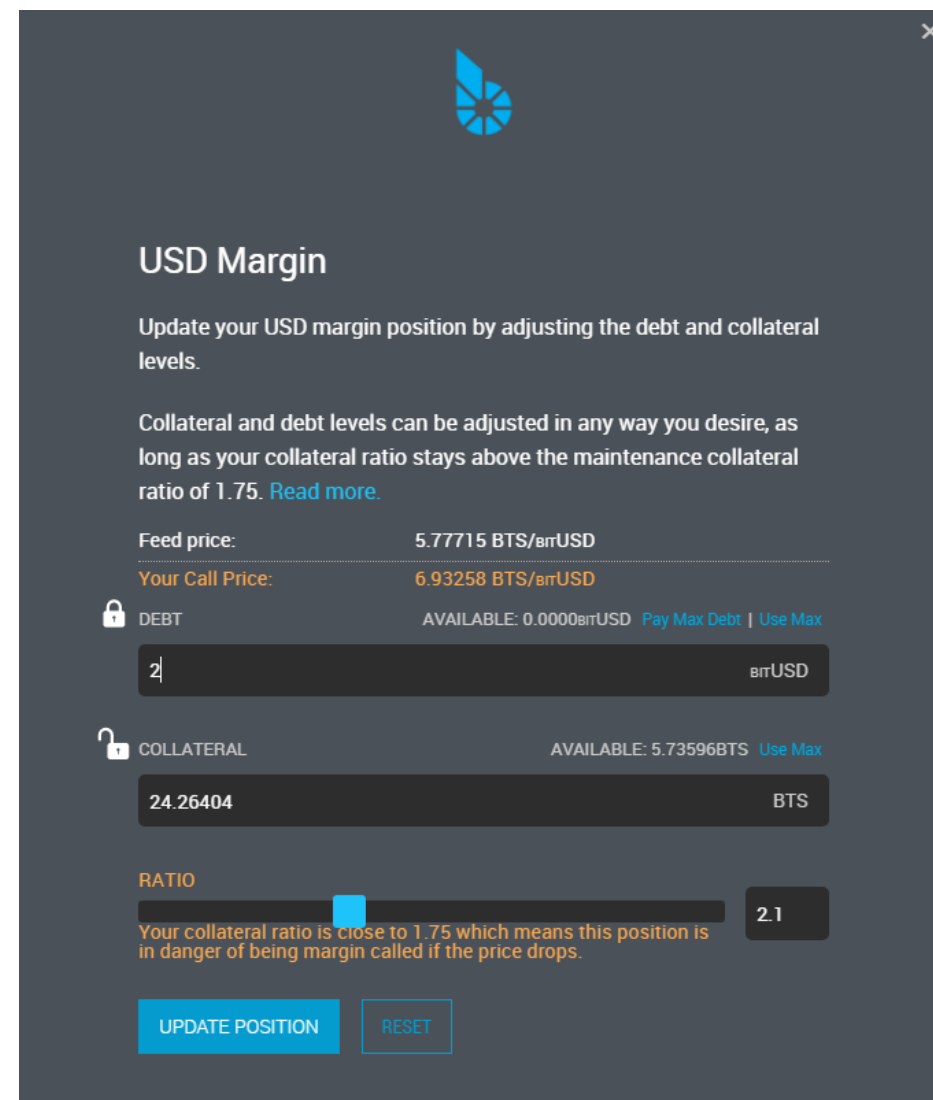
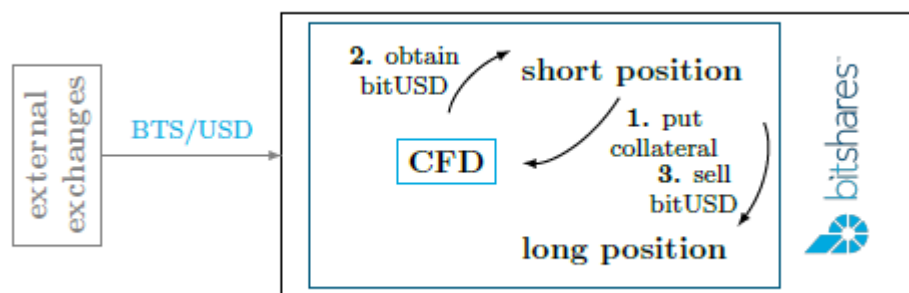


- Symbol: BitUSD
- Issuer: Bitshares protocol
- Launched in 2014
- Bitshares asset (bitasset)
- Collateralized with Bitshares (BTS)
- No fiat gateway (yet)



Decentralized collateral-backed BitUSD

- 1 BitUSD is created as loan or *short* position when at least \$2 worth of BTS is locked (200% collateral)



The screenshot shows the 'USD Margin' interface on the Lykke platform. The interface is dark-themed and features a blue Lykke logo in the top left corner. The main heading is 'USD Margin' with a sub-heading: 'Update your USD margin position by adjusting the debt and collateral levels.' Below this, there is a paragraph explaining that collateral and debt levels can be adjusted as long as the collateral ratio stays above the maintenance ratio of 1.75, with a link to 'Read more.' The interface displays the following information:

- Feed price: 5.77715 BTS/bitUSD
- Your Call Price: 6.93258 BTS/bitUSD
- DEBT: AVAILABLE: 0.0000bitUSD Pay Max Debt | Use Max
- COLLATERAL: AVAILABLE: 5.73596BTS Use Max
- RATIO: 2.1

A warning message states: 'Your collateral ratio is close to 1.75 which means this position is in danger of being margin called if the price drops.' At the bottom, there are two buttons: 'UPDATE POSITION' and 'RESET'.

Decentralized collateral-backed BitUSD



- bitUSD tracks Bitshares (BTS) price
- Price feed is written to blockchain by witness nodes: <https://github.com/xeroc/bitshares-pricefeed/>
- Price is normally a weighted average from various sources: https://github.com/xeroc/bitshares-pricefeed/tree/master/bitshares_pricefeed/sources
- Each witness can decide frequency on its own .. usually they have something like this: *publish new price feed if price moves more than x% or my feed is older than 12h*
- bitUSD has a feed expiration of 24hrs
- Median of prices is taken as *settlement price*

Decentralized collateral-backed BitUSD



- **1 bitUSD** collateral always worth at least **\$1** equivalent
- bitUSD holder can order *forced settlement* (delivery of the underlying)
- Executed in **24 hours** at market price
- The collateral is taken from those traders that have the lowest collateral ratio (hence improve it)
- Minor fee is paid (**1%**, goes to the shorter)

- When BTS price is up everything is great! Collateral \$ value increases
- What happens when the price goes down?

Decentralized collateral-backed BitUSD

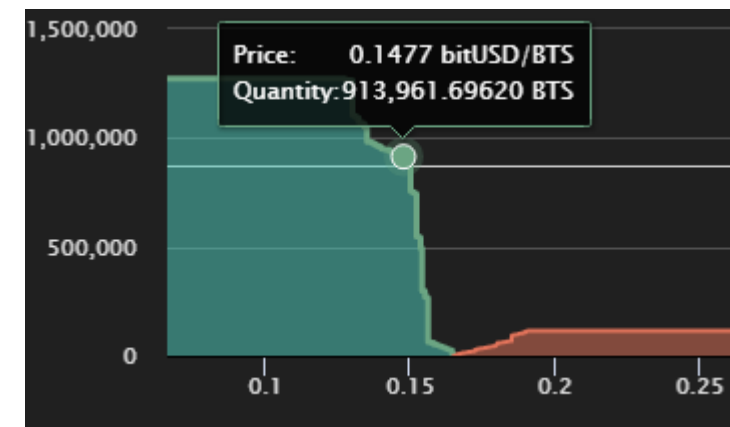


- Every "shorter" maintains their own call positions and has its own collateral ratio (collateral/debt)
- The least collateralized positions are queued for margin call
- Margin call is executed when collateral value falls below *Maintenance Collateral Ratio* (currently **MCR=175%**)
- Protocol evaluates how much collateral has to be liquidated to get out of the margin call regime
- Protocol tries to liquidate collateral (BTS) on Bitshares DEX: sends limit order with feed price corrected by Short-squeeze protection (**10%**)

```

~ uptick calls USD
-----+-----+-----+-----+-----+
|          |          |          |          |          |
|   acount |      debt | collateral |   call price |   ratio |
|-----+-----+-----+-----+-----+
| obright-1 | 685.3596 USD | 6,940.11591 BTS | 5.786422952 BTS/USD | 1.76 |
| lixiangyang18624961519 | 18,084.8006 USD | 183,148.42598 BTS | 5.786972482 BTS/USD | 1.76 |
| wildshaman-c | 1,150.0000 USD | 11,650.00000 BTS | 5.788819876 BTS/USD | 1.76 |
| delta-trill | 31,100.6691 USD | 315,107.99223 BTS | 5.789641029 BTS/USD | 1.76 |
| mr-saykopat | 59,242.7016 USD | 600,242.57223 BTS | 5.789671070 BTS/USD | 1.76 |
| denkhaus | 113,956.4076 USD | 1,154,699.82907 BTS | 5.790183173 BTS/USD | 1.76 |
| heelerchow443 | 84.1624 USD | 853.00000 BTS | 5.791524142 BTS/USD | 1.76 |
| red-head | 144,482.3367 USD | 1,464,685.52551 BTS | 5.792840679 BTS/USD | 1.76 |
| stvstpisc1 | 31,797.8167 USD | 322,601.94979 BTS | 5.797378262 BTS/USD | 1.76 |
| stk87 | 0.8000 USD | 8.11979 BTS | 5.799850000 BTS/USD | 1.76 |
-----+-----+-----+-----+-----+

```



Decentralized collateral-backed BitUSD



- Suppose price = **1 bitUSD / 10 BTS** ($p = 0.1$)
- Alice is shorter. Alice borrows **100 bitUSD** for **1800 BTS**. Collateral ratio = 1.8 ($>MCR=1.75$).
Minimum required collateral = $100 * MCR / p =$ **1750 BTS**
- Suppose price goes down to **1 bitUSD / 11 BTS** ($p = 0.091$)
- Alice position is undercollateralized now. Minimum required collateral = $100 * MCR / p =$ **1925 BTS**
- Suppose Bob wants to buy BTS worth of **20 bitUSD** and sends limit order at price **1 bitUSD / 12 BTS** ($p = 0.082$)
- Protocol evaluates how much collateral has to be liquidated to improve MCR and sends **20 bitUSD** sell order at the price of **1 bitUSD / 12.1 BTS** ($+10\%$ max squeeze). They match with Bob and swap **20 bitUSD** vs. **240 BTS**.
- Alice now owes less $100 - 20 =$ **80 bitUSD** and holds $1800 - 240 =$ **1560 BTS** collateral.
- She is OK. Collateral ratio = **1.77** ($>MCR=1.75$). Minimum required collateral = $80 * MCR / p =$ **1540 BTS**

Decentralized collateral-backed BitUSD



- If any (least collateralized) call position goes below 100% collateral the **blackswan** event is triggered, a.k.a. “**Global Settlement**”
- This happen when BTS valuation drops significantly and no one is willing to short-sell at a +10% premium until the least collateralized position reaches 100%

Decentralized collateral-backed BitUSD



The consequences are:

- no more margin calls on bitUSD/BTS
- no more borrowing of bitUSD
- last available price is tagged
- **ALL** call positions are moved over to the issuer account (*committee*)
- committee write-offs debt and collateral, excess collateral is paid out to the original shorters, *e.g. If you have a call position at 200% at the time of a black swan, you will a) get half of the collateral paid out, b) lose the other half, but c) also drop the liability/debt.*
- trading continues as usual
- bitUSD forced settlement continues as usual
- The collateral in the committee account is then used to cover those settlements

Decentralized collateral-backed BitUSD



This situation stays as long as either:

- BTS price recovers so that the collateral (now owned by the committee) covers the debt (also owned by committee) with 175%, or
- market participants have place sufficient bids to 'buy' the debt&collateral so that the ratio goes to 175% too (BSIP18 <https://github.com/bitshares/bsips/blob/master/bsip-0018.md>)

There were a few blackswans: *bitNZD*, *bitSEK*, *bitRUB*, *bitBTC*, *bitGOLD*, *bitSILVER*.

Most of them recovered when BTS went up again.

bitGOLD was recovered through BSIP18 (which means people have placed bids to buy up the entire collateral and debt that was left).

bitBTC has not recovered.

Decentralized collateral-backed BitUSD



Significant changes in market properties on July 19:

- BSIP30: Always Allow Increasing Collateral Ratio If Debt Not Increased
- BSIP31: Update Short Position's Margin Call Price After Partially Called Or Settled
- BSIP32: Always Match Orders At Maker Price
- BSIP33: Maker Orders With Better Prices Take Precedence
- BSIP34: Always Trigger Margin Call When Call Price Above Or At Price Feed

<https://www.bitshares.foundation/announcements/2018-06-18-bitshares-core-release-2-0-180612>

Decentralized collateral-backed BitUSD



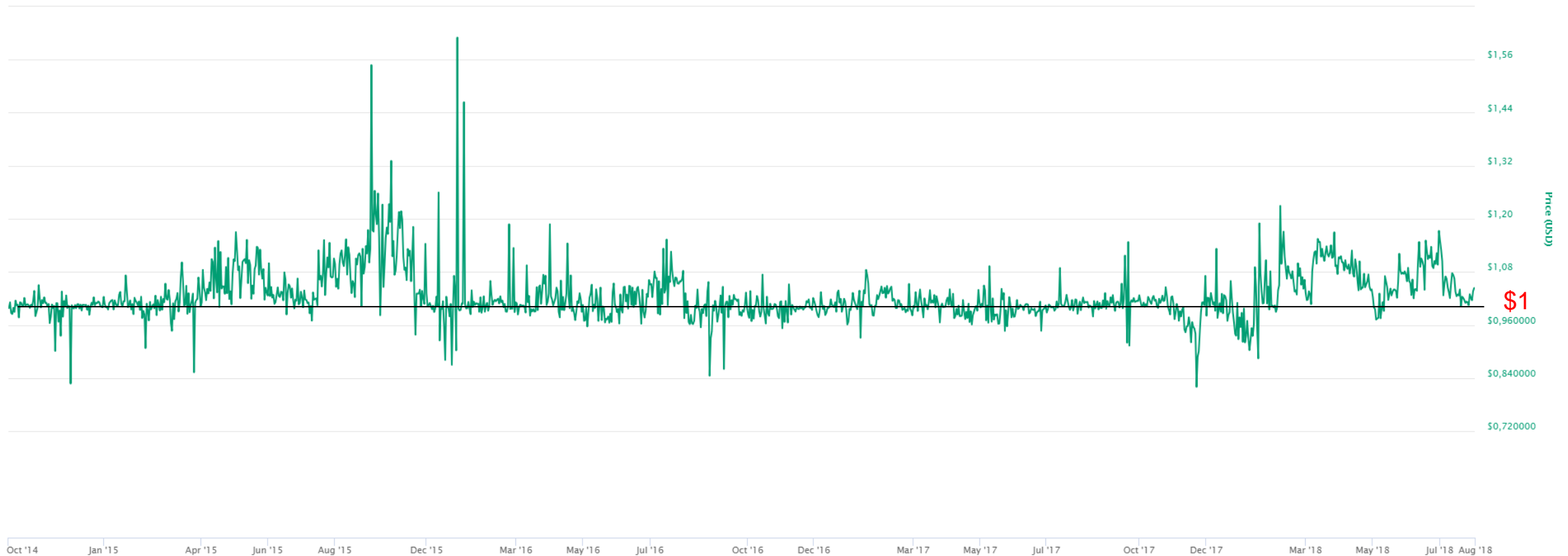
- **\$12m** bitUSD in circulation



Decentralized collateral-backed BitUSD



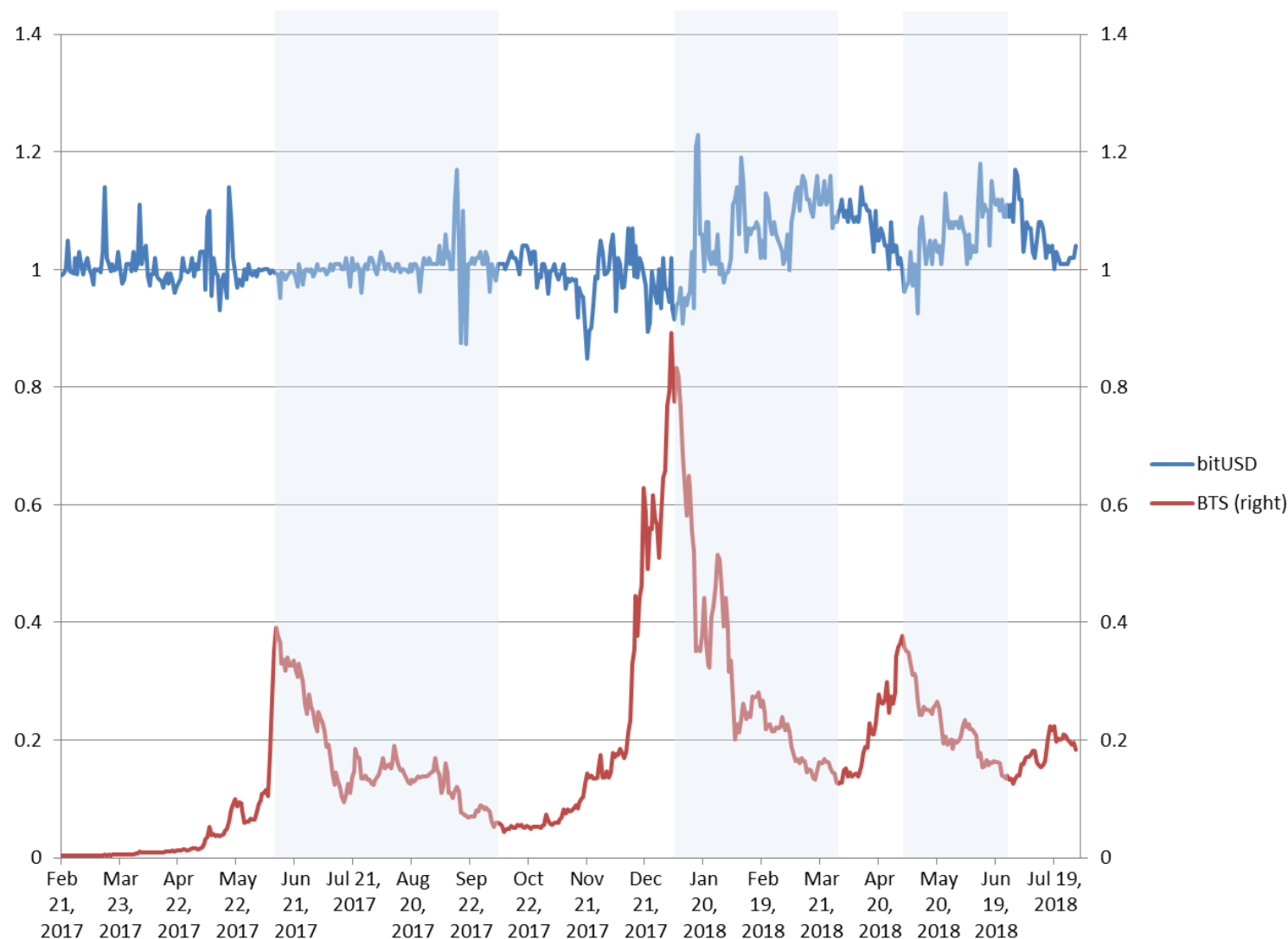
- **3.7%** 3m-volatility of bitUSD/USD, **6.1%** sample std.dev (vs. 6% and 8.2% respectively for BTS)



Decentralized collateral-backed BitUSD



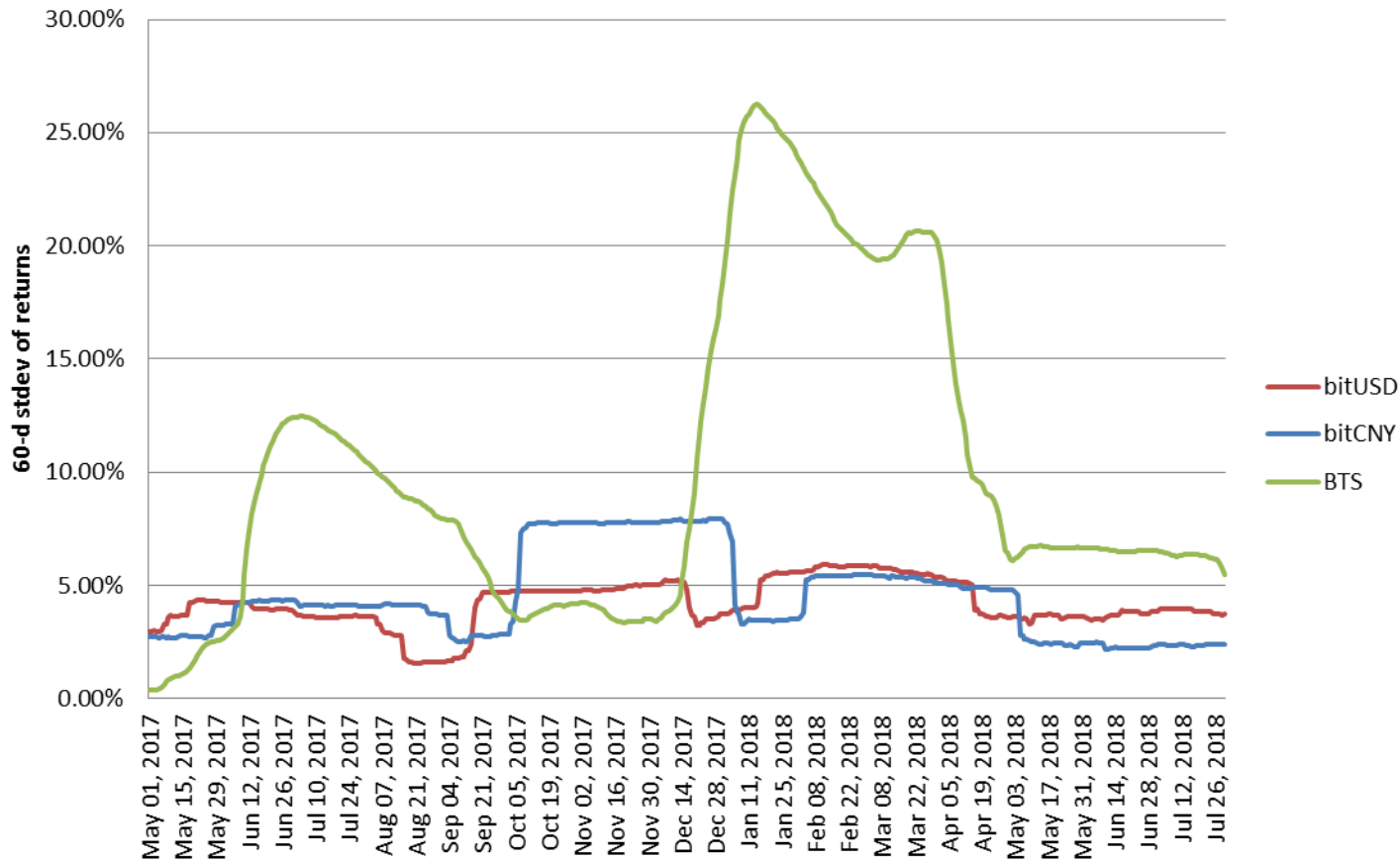
- bitUSD normally is growing >\$1 during bear markets as speculators tend to reduce their leverage and buy back bitUSD



Decentralized collateral-backed BitUSD



- bitCNY is more liquid recently (**\$34m** bitCNY issued), volatility is comparable to bitUSD



Decentralized collateral-backed BitUSD



Useful links:

- <https://bravenewcoin.com/assets/Whitepapers/bitshares-financial-platform.pdf>
- <https://bitshares.org/technology/price-stable-cryptocurrencies/>
- <http://bytemaster.github.io/article/2014/12/18/What-are-BitShares-Market-Pegged-Assets/>
- <http://bytemaster.github.io/guest/2014/12/22/How-BitShares-Works/>
- <https://github.com/bitshares/bsips/blob/master/bsip-0018.md>
- [https://www.reddit.com/r/BitShares/comments/6684x1/can somebody explain bitusd please thanks/](https://www.reddit.com/r/BitShares/comments/6684x1/can_somebody_explain_bitusd_please_thanks/)

Decentralized collateral-backed MakerDAO



- Symbol: DAI
- Issuer: MakerDAO
- Launched in 2018
- ERC20 compatible token
- Collateralized with Ethers
- Pegged to USD/SDR

- Coupled with MKR “*Stakercoin*”
 - Equity
 - Buy back program
 - Governance (voting on parameters)
 - Tail risk exposure



Decentralized collateral-backed MakerDAO



- Dai is created by locking ETH in smart contract (called *collateralized debt position* or CDP)
- ETH → Wrapped ETH (ERC20 for ETH) → Pooled ETH (allows dilution and burning)
- Locked collateral can be recovered at any time by paying back the borrowed Dai (plus a stability fee)

My CDPs	Open CDPs	Unsafe CDPs	Closed CDPs	All CDPs						
CDP Id	Stability Debt (DAI)	Governance Debt (MKR)	Locked (PETH)	% Tot (PETH)	% Ratio	Avail. DAI (to draw)	Avail. PETH (to free)	Liquidation Price	Status	
2642	41,237.000	0.001	220.057	0.063%	235.693%	23,558.374	80.008	277.379	Safe	
2643	0.000	0.000	0.000	0.000%	-	0.000	0.000	-	Closed	
2644	19,698.960	0.000	98.663	0.028%	221.213%	9,352.177	31.761	295.537	Safe	
2645	30.000	0.000	0.150	0.000%	220.835%	14.167	0.048	296.042	Safe	
2646	19,549.770	0.000	98.663	0.028%	222.901%	9,501.367	32.268	293.298	Safe	
2647	10.000	0.000	0.045	0.000%	198.751%	3.250	0.011	328.936	Risk	
2648	180.000	0.000	0.986	0.000%	242.136%	110.563	0.375	270.000	Safe	

Decentralized collateral-backed MakerDAO



The first Dai instance has been deployed with the following parameters:

System Status

Status	System Collateralization	Debt Ceiling Ratio	PETH/ETH	Total Liquidity Available from forced CDP liquidations								
Active	275.590%	55.293%	1.013	Sell 0.000 DAI Buy 0.000 PETH	Sell 0.000 PETH Buy 0.000 DAI							
				Buy PETH with DAI	Buy Dai with PETH							
ETH/USD	MKR/USD	DAI/USD	Liq. Ratio	Liq. Penalty	Debt Ceiling	Spread (Join/Exit)	Spread (Bust/Boom)	Total Bad Debt	Deficit	Safe	Stability Fee (365 days)	Governance Fee (365 days)
435.844	620.608	1.000	150.000%	13.000%	100,000,000.000	0.000%	-3.000%	0.000	NO	YES	0.000%	0.500%

DAI Target Rate (365 days)

0.000%

Stats

CDPs Opened	CDPS Closed	Bite Counter	Give Counter	Tot PETH Locked	Tot PETH Freed	Tot DAI Drawn	Tot DAI Wiped
2295	666	380	737	401,159.936	89,952.667	88,157,322.885	31,884,651.285

Decentralized collateral-backed MakerDAO



Liquidation

- If CDP reaches Liquidation Ratio the Maker platform will acquire and liquidate the collateral.
- The CDP owner receives the value of the leftover collateral *minus* the debt, Stability Fee and Liquidation Penalty
- The PETH collateral is set for sale in the Liquidity Providing Contract, and *keepers* can atomically purchase the PETH by paying Dai

Decentralized collateral-backed MakerDAO



Price oracles

- MKR voters choose a set of trusted oracles to feed this information to the Maker Platform through Ethereum transactions
- Oracles submit underlying asset prices to blockchain
- Price Feed Sensitivity Parameter protects oracles from collusion and price manipulation
- This restriction ensures there is enough time to trigger a global settlement

Decentralized collateral-backed MakerDAO



“Global Settlement”

- Global Settlers are external actors similar to price feed oracles and are the last line of defense for the Dai Stablecoin System in the event of an attack.
- The set of global settlers, selected by MKR voters, have the authority to trigger global settlement.
- When triggered it stops CDP creation and manipulation, and freezes the Price Feed at a fixed value that is then used to process proportional claims for all users.
- After Global Settlement has been activated, a period of time is needed to allow keepers to process the proportional claims of all Dai and CDP holders based on the fixed feed value.
- Each Dai and CDP holder can call a claim function on the Maker Platform to exchange their Dai and CDPs directly for a fixed amount of ETH that corresponds to the calculated value of their assets, based on the target price of Dai. There is no time limit for when the final claim can be made.

Decentralized collateral-backed MakerDAO



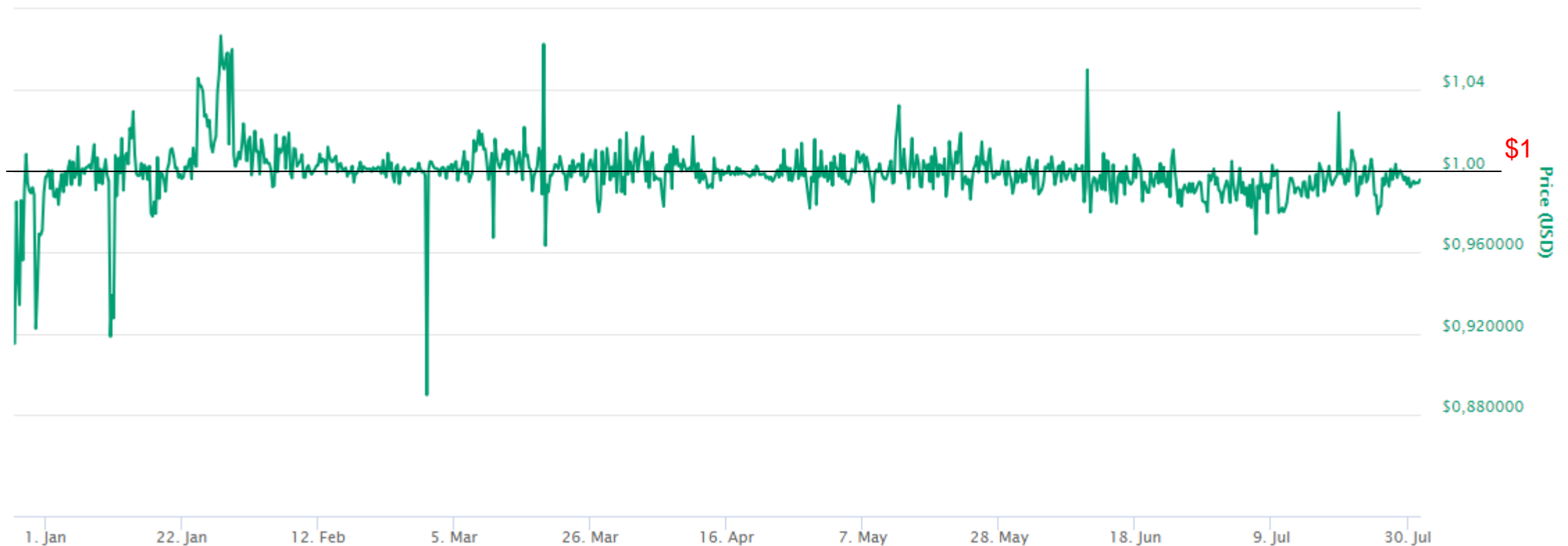
- **\$55m** DAI in circulation



Decentralized collateral-backed MakerDAO



- **1.1%** 3m-volatility of bitUSD/USD, **1.3%** sample std.dev



Decentralized collateral-backed MakerDAO



Pros

- ERC20 compatibility is a huge advantage: Dai is going to be used by Ethereum-based projects: DEXs, remittance, prediction markets, etc.
- Decentralized governance and transparent structure
- Achieved better stability than other stablecoins

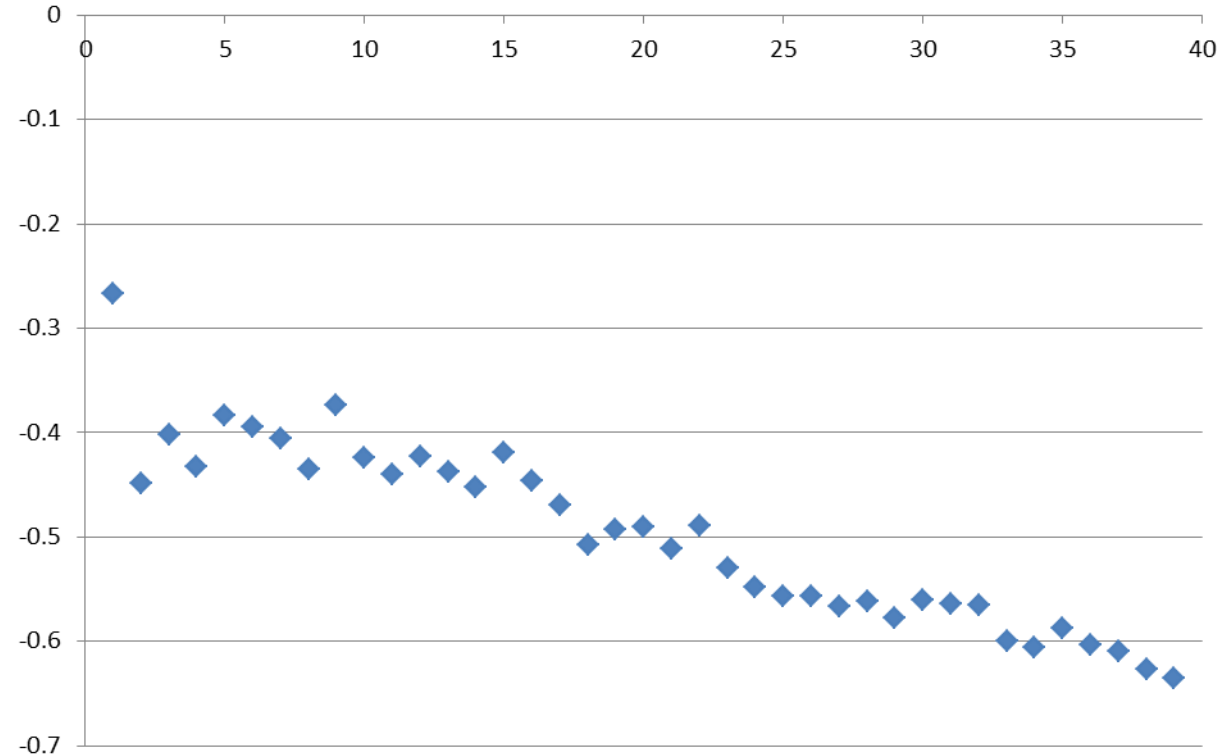
Cons

- The process is pretty complicated
- Not clear how efficient CDP liquidation will function in severe bear markets (liquidity?) and during *blackswan* Global Settlement events
- Oracles and Global Settlers are points of failure
- No partial settlement of CDPs

Decentralized collateral-backed MakerDAO



- Worst N-days returns for Ether price: **-27%** in a day, **-45%** in 2 days, **-60%** in a month
- Current DAI pool collateral-debt ratio is 275%: **-45%** to breach 150%, **-63%** to breach 100%



Algorithmic-stable coins

Basis

- Issuer: Intangible Labs
- Just raised \$133m
- Stable cryptocurrency with algorithmic central bank



Algorithmic-stable coins

Basis



Three-token system:

- *Basecoin.*

Pegged to the USD and are intended to be used as a medium of exchange.

Their supply is expanded and contracted in order to maintain the peg.

- *Base Bonds.*

Auctioned off by the blockchain when it needs to contract Basecoin supply.

Each bond promises 1 Basecoin at some point in the future under certain conditions.

Newly-issued bonds are sold on open auction for prices of less than 1 Basecoin (yield curve).

- *Base Shares.*

Shares supply is fixed at the genesis of the blockchain.

Their value stems from their dividend policy.

When demand for Basecoin goes up and the blockchain creates new Basecoin to match demand,

shareholders receive these newly-created Basecoins pro rata after all outstanding Base Bonds

have been redeemed.

Algorithmic-stable coins Basis



Expansion:

- Happens when Basecoin >\$1
- Blockchain orders outstanding Base Bonds according to when they were issued, with the oldest first (*Bond Queue*) as well as outstanding Base Shares.
- Blockchain creates N new Basecoin tokens and distributes them as follows:
 - 1) Bondholders are paid first, and in first-in-first-out (FIFO) order. Blockchain converts bonds into coins, one-for-one, according to their order in the Bond Queue.
 - 2) Shareholders are paid after bondholders. If there are no more outstanding Base Bonds, the system issues any remaining new coins to shareholders, pro rata, as a dividend.

Algorithmic-stable coins Basis



Expansion (example):

- Suppose there are **500** bonds in the Bond Queue, **200** of which were created more than 5 years ago. Additionally, suppose there are **1,000** shares in circulation.
- Suppose the system needs to create **1,000** new coins.
- The system expires the **200** oldest bonds, leaving **300** bonds in the queue.
- The system redeems **300** bonds.
- The system distributes **700** more coins evenly across the **1,000** shares. Each share receives $700 / 1,000 = 0.7$ coins.

Algorithmic-stable coins

Basis



Contraction:

- Basecoin < **\$1**
- Blockchain tries to lock up existing Basecoins in exchange for future payoff
- Blockchain runs a Dutch auction in which bidders specify a bid and bid size for Base bonds
- Then it chooses the orders with the highest bids and converts the holders' coins into bonds until sufficient Basis has been destroyed
- Price floor is **0.10** Basis per bond

Algorithmic-stable coins Basis



Contraction (example):

- Suppose the system wants to auction **100** bonds.
- Suppose that there are three buy orders on the order book: One bid for **80** bonds at **0.8** Basis each, one bid for **80** bonds at **0.6** Basis each, and one bid for **80** bonds at **0.4** Basis each.
- The system will compute the clearing price, which is a single price at which all offered bonds would have been bought at. Here, the clearing price is **0.6** Basis.
- The system will fill the winning bids at the clearing price: The first user will receive **80** bonds in exchange for $80 * 0.6 = \mathbf{48}$ coins, and the second user will receive **20** bonds in exchange for $20 * 0.6 = \mathbf{12}$ coins.
- Both winners will have to wait until their bonds matures to receive **80** and **20** Basecoins, but no longer than 5 years (when both bonds defaults)

Decentralized collateral-backed Basis



Pros

- Interesting approach to solve the cryptocurrency deterministic supply problem

Cons

- Will it work?
- Probably will not help short-term stability
- Blockchain technology part is completely out of scope

Algorithmic-stable coins

Face-to-face



	Tether	bitUSD	MAKER	BASIS
Price stability	2.6%	3.7%	1.1%	???
Transparent structure	No	Protocol code	Smart contract	Likely
Counterparty risk	High	Little	Median	Little
Tail event risk	High	Medium	Medium-rare	May be high
Fiat gateway	Yes	Not yet	Not yet	???
Market liquidity	High	Low	Growing	???
Scalability	Low	Quite high	Low, but... Plasma	???
Privacy	KYC required	Ok	Ok	???
Censorship resistance	No	Yes	Yes	???
Adoption	High (\$2.5b)	Low (\$11m)	Low, but grows (\$55m)	???

7

9

13