Stablecoins

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Before & After



VS



2010 1 pizza = ₩20,000 10,000 BTC = 2 pizzas **2017** 1 pizza = ₩20,000 10,000 BTC = <u>**13,308,000**</u> pizzas (1 BTC = ₩26,616,000)

BTC is too volatile!

It is impossible to use BTC as an alternative of the real currency.

Contents



Stablecoin

• **Stablecoins** are cryptocurrencies designed to <u>minimize the volatility</u> of the price of the stablecoin, relative to some "stable" asset or basket of assets.

– Wikipedia



Stablecoin

Fiat-Collateralized Stablecoin



Crypto-Collateralized Stablecoin



Non-Collateralized Stablecoin





T TrueUSD

Before the Explanation





Tether Stablecoin



- Issued by Tether Limited
- Fiat-Collateralized: Tether Limited should exchange 1 UDST (Tether) into 1 USD.



If 1 USDT < 1 USD, the supply of USDT decreases.



If 1 USDT > 1 USD, the supply of USDT increases.



Issues



There are some centralization issues on tether.

- The only subject who controls the supply of tether is Tether Limited.
- Tether Limited may not deposit the actual USDs.
- There is a suspicion that Bitfinex manipulated the Bitcoin price in 2017 winter, using Tether.

Reference: M. Griffin, John & Shams, Amin. (2018). Is Bitcoin Really Un-Tethered?. SSRN Electronic Journal.



Chart





Chart



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DAI Stablecoin, MKR token

MAKER (MKR: Rank 22, DAI: Rank 74 in CoinMarketCap)

- Issued by Collateralized Debt Position(CDP) Ethereum Issued Smart contracts.
- There are two tokens, DAI \diamondsuit and MKR \square
- Crypto-Collateralized: ETH I should be collateralized to get DAI
- MKR $\uparrow \uparrow$ token makes DAI \Leftrightarrow to keep $1 \Leftrightarrow =$ \$1

How to Get DAI 🔶

 Collateralized Debt Position (CDP) Smart Contracts: Anyone who has collateral assets can leverage them to generate Dai on the Maker Platform through Maker's unique smart contracts known as Collateralized Debt Positions. MAKFR

• **Pooled Ether**: At first, **Pooled Ether** (PETH) will be the only collateral type accepted on Maker. This is done instantly and easily on the blockchain by depositing ETH into a special smart contract that <u>pools the ETH from all</u> <u>users, and gives them corresponding PETH in return</u>.



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How to Pay Down the Debt

 Paying down the debt and Stability Fee: When the user wants to retrieve their collateral, they have to pay down the debt in the CDP, plus the <u>Stability fee</u> that continuously accrue on the debt over time. <u>The Stability</u> <u>Fee can only be paid in MKR</u>. Once the user sends the requisite Dai and MKR to the CDP, paying down the debt and Stability Fee, the CDP becomes debt free.



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How to Keep 1 = \$1

- Target Price: The Dai Target Price has two primary functions on the Maker Platform: 1) It is used to calculate the <u>collateral-to-debt ratio of a CDP</u>, and 2) It is used to <u>determine the value of collateral assets</u> Dai holders receive in the case of a global settlement.
- **Target Rate Feedback Mechanism (TRFM)**: The **TRFM** is the automatic mechanism by which the Dai Stablecoin System adjusts the Target Rate in order to cause market forces to maintain stability of the Dai market price around the Target Price.

How to Keep 1 = \$1

 When the market price of Dai is below the Target Price, the <u>Target Rate</u> increases. This causes the <u>Target Price</u> to increase at a higher rate, causing generation of Dai with CDPs to become more expensive. At the same time, the increased Target Rate causes <u>the capital gains from holding Dai</u> to increase, leading to a corresponding increase in <u>demand for Dai</u>.



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 This combination of reduced supply and increased demand causes the <u>Dai</u> <u>market price</u> to <u>increase</u>, pushing it back up towards the Target Price.

How to Keep 1 = \$1

 The same mechanism works in reverse if the Dai market price is higher than the Target Price: the <u>Target Rate</u> decreases, leading to an increased demand for <u>generating Dai</u> and a decreased demand for <u>holding it</u>. This causes the <u>Dai market price</u> to decrease, pushing it down towards the Target Price.



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 This mechanism is a negative feedback loop: Deviation away from the Target Price in one direction increases the force in the opposite direction.

How to Use MKR

- Modify Sensitivity Parameter: Change the sensitivity of the Target Rate Feedback Mechanism
- Modify Target Rate: Governance can change the Target Rate.
- Choose the set of trusted oracles: MKR voters control how many nodes are in the set of trusted oracles, and who those nodes are.

1 A K F R



• The MKR token allows holders to vote to perform the following Risk Management actions: Add new CDP type, Modify existing CDP types, Modify Sensitivity Parameter, Modify Target Rate, Choose the set of trusted oracles, Modify Price Feed Sensitivity and Choose the set of global settlers

If Ethereum price decrease...

 Automatic Liquidations of risky CDPs: <u>A CDP can be liquidated</u> if it is deemed to be too risky. The Maker Platform determines when to liquidate a CDP by comparing <u>the</u> <u>Liquidation Ratio</u> with <u>the current collateral-to-debt ratio of the CDP</u>. ... The Maker Platform will <u>automatically buy</u> the collateral of the CDP and subsequently <u>sell it off</u>.

AKFR



 If any Dai is paid in excess of the debt shortfall, the excess Dai is used to <u>purchase</u> <u>PETH from the market and burn it</u>, which **positively changes** the ETH to PETH ratio. This results in a **net value gain** for PETH holders.

If Ethereum price decrease...

 Automatic Liquidations of risky CDPs: <u>A CDP can be liquidated</u> if it is deemed to be too risky. The Maker Platform determines when to liquidate a CDP by comparing <u>the</u> <u>Liquidation Ratio</u> with <u>the current collateral-to-debt ratio of the CDP</u>. ... The Maker Platform will <u>automatically buy</u> the collateral of the CDP and subsequently <u>sell it off</u>.

1 A K F R



 If the PETH selloff initially does not raise enough Dai to cover the entire debt shortfall, more PETH is <u>continuously created and sold off</u>. New PETH created this way negatively changes the ETH to PETH ratio, causing PETH holders to lose value.



Issues

• Are they decentralized? Yes. DAI ERC-20 token is managed by Ethereum smart contract, basically. MKR $\fbox{}$ token is used to manage DAI by voting.

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Chart



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Chart



Basis Stablecoin



• Non-Collateralized: Only algorithm keeps the price.



BASIS supply decreases by issuing Base Bond.

Basis Stablecoin



• Non-Collateralized: Only algorithm keeps the price



BASIS supply increases by exchanging BaseBond.

Basis Stablecoin



Base Share is issued in advance to supply sufficient BASIS.

Issues

- BASIS attracted \$133 million of venture capital, but <u>shut down</u> in December 2018.
- "Unfortunately, having to apply US securities regulation to the system had a serious negative impact on our ability to launch Basis."
- "As such, we are sad to share the news that we have decided to return capital to our investors. This also means, unfortunately, that the Basis project will be shutting down."

- basis.io

 Valerie Szczepanik, SEC (Securities and Exchange Commission)'s Senior Advisor, reportedly said that since <u>a central party controls the price fluctuations over time</u>, that last kind of stablecoins "might be getting into the land of securities." [1]

[1] <u>https://cointelegraph.com/news/secs-senior-advisor-for-digital-assets-valerie-szczepanik-stablecoins-may-be-securities</u>

Checkpoint

• Fiat-Collateralized Stablecoin



Crypto-Collateralized Stablecoin



Non-Collateralized Stablecoin







[1] Special Drawing Rights (SDR, ISO 4217 currency code XDR) are supplementary foreign-exchange reserve assets defined and maintained by the International Monetary Fund (IMF).
[2] 1 XDR = 1.38 USD (May 24, 2019) <u>https://www.imf.org/external/np/fin/data/rms_sdrv.aspx</u>



















Issues

- Luna was first listed on May 7, 2019.
- Terra 🛜 is not listed yet.
- Terra Alliance: Various partners to increase current of Terra









Centralization Issues

• Fiat-Collateralized Stablecoin



Crypto-Collateralized Stablecoin



Decentralized: Issued by Ethereum smart contract MKR token governance

Non-Collateralized Stablecoin



Unfortunately, having to apply US securities regulation to the system had a serious negative impact on our ability to launch Basis."



Recent Issues



[1] <u>https://cointelegraph.com/news/nyag-requests-that-bitfinex-be-forced-to-release-tether-deal-documents</u>
 [2] <u>https://ethereumworldnews.com/bitfinex-and-tether-usdt-attempt-dismissal-of-nyag-case/</u>

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Recent Issues



 In March, the DAO already raised the stability fee twice, first to <u>3.5%</u>, and then to <u>7.5%</u> per year. Also last week, the fee was further increased by another 4% in the fifth such vote this year, bringing it to <u>11.5%</u>, where it currently stands. If the increase will be accepted again, the fee will reach <u>15.5%</u>. [1]

[1] <u>https://cointelegraph.com/news/makerdao-token-holders-vote-about-whether-to-</u> <u>raise-dai-stability-fee-by-3</u>



Recent Issues

테라, 개인투자자 대상 '루나' 토큰 판매 시작...한국인은 못산다

"한국인 투자 참여는 외국환거래법 위반 소지 있어서 배제" 美·中·日 등 암호화폐 개인투자 금지된 국가 사람들도 구입 못해 테라와 루나 토큰, 한국서 1분기 내 결제수단으로 서비스 개시 예정

정책, 테크, 마켓/2019년 02월 08일 @ 오후 1:33/김미희 기자/

스테이블코인 '테라' 짝꿍인 '루나' 세계 최초로 7일 코인원에 단독상장

테크, 마켓/2019년 05월 03일 @ 오후 2:21/김미희 기자/

'테라' 메인넷 성공적 출시, 거래소 상장-티몬결제 도입 시기에 '관심'

메인넷 이름은 '콜롬버스'...1% 미만 낮은 수수료-안정적 거래속도 강점으로

마켓/2019년 04월 25일 @ 오후 2:38/허준 기자/

[1] https://blockpost.com/tech/28704/

[2] https://blockpost.com/tech/39784/

[3] https://blockpost.com/market/39019/

Conclusion

- **Stablecoins** are cryptocurrencies designed to <u>minimize the volatility</u> of the price of the stablecoin, relative to some "stable" asset or basket of assets.
- There are three kinds of stablecoins: fiat-collateralized, cryptocollateralized, and non-collateralized stablecoin
- There are some important issues: **Centralization**, **Legal regulation**, and **Sustainability**. These issues are under discussion these days.

