Blockchain (BlCh)

Stablecoins

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Introduction to Stablecoins

- "Stablecoins are cryptocurrencies where the price is designed to be pegged to a reference asset." [link]
- Collaterization: how to back the stablecoin
  - Fiat money (USD, EUR)
  - Asset-backed (e.g., gold)
  - Crypto-Collateralized
    - Crypto asset backed stablecoins (decentralization)
    - Algorithmic stablecoins (probably don't work)
- Reasons for stablecoins
  - Cryptocurrencies have high volatility
  - Payment in "real world" still with fiat
- From a technical perspective, stablecoins are mostly smart contract tokens, not native currencies
- Examples [link]

	Name	Chains	% Off Peg	1m % Off Peg	Price	1d Change	7d Change	1m Change	Market Cap
1	Tether (USDT)	+74	0%	-0.13%	$1	0%	+0.24%	+1.28%	$119.635b
2	USD Coin (USDC)	+73	0%	+0.10%	$1	-0.07%	-2.10%	+2.53%	$35.301b
3	Dai (DAI)	+38	0%	+0.20%	$1	-0.60%	-1.55%	-4.88%	$5.004b
4	Ethena USDe (USDe)	+11	-0.09%	-0.19%	$1	+0.01%	-0.66%	-6.32%	$2.534b
5	First Digital USD (FDU...		-0.31%	-0.70%	$1	-2.91%	-9.68%	-2.40%	$2.346b
6	Sky Dollar (USDS)		-3.58%	-4.01%	$0.96	-3.97%	+84.98%		$965.18m
7	USDD (USDD)		-0.23%	-0.57%	$1	-0.09%	-0.26%	-2.55%	$734.09m
8	PayPal USD (PYUSD)		0%	+0.20%	$1	+0.38%	-2.16%	-22.61%	$694.96m
9	BlackRock USD (BUIDL)		-	-	-	+2.19%	+2.02%	+1.24%	$523.62m
10	TrueUSD (TUSD)	+4	-0.55%	-0.55%	$0.99	-0.13%	-0.36%	-0.35%	$483.29m

History of Stablecoins

- Early Days of Stablecoins (2014-2017)
  - 2014: Tether (USDT) launched as first major stablecoin, 1:1 peg to the US dollar
  - 2015-2017: USDT gains traction, offering traders a “safe harbor” from volatility
- Growth and Evolution (2018-2019)
  - 2017-2018: USDT raises questions about transparency and reserve audits
  - 2018: MakerDAO launches DAI, first major decentralized, crypto-collateralized stablecoin. DAI gains popularity in the DeFi space
  - 2019: Facebook announces Libra, global stablecoin backed by basket of fiat currencies.
- Stablecoins in DeFi and Algorithmic Experiments (2020-2021)
  - 2020: Stablecoins gainpopularity due to DeFi. USDC, DAI, BUSD gain significant market share
  - 2021: UST emerges as prominent algorithmic stablecoin. Rapid adoption but collapses in 2022 → major crisis in crypto market
- Recent Developments (2022-Present)
  - 2022: Collapse of UST shows risks of algorithmic stablecoins.
  - 2023: Increased regulatory pressure from global entities, EU and U.S. (e.g., MiCA, U.S. Treasury) → improve transparency and compliance.
  - CBDC are still not relevant in crypto markets
    - VISA press release

Stablecoins Gone Wrong (1/2)

- Successful: USDT/USDC/DAI
- Epic fail: Terra/UST
  - Algorithmic Nature of UST
    - Seignorage-Style Stablecoin [link]
  - Anchor Protocol and High-Yield Returns
  - The Depegging
    - Loss of confidence
    - Market volatility
    - Mass withdrawals from Anchor
  - Death Spiral Mechanism
  - Impact and Consequences
    - Complete collapse of UST and LUNA
    - Losses for investors - TerraUSD and Luna with almost $45 billion market capitalization
    - Regulatory scrutiny
  - Lessons from Terra UST’s collapse
    - Algorithmic models can be highly unstable
    - Sustainability of high yields
    - Regulatory gaps
- Co-founder and CEO: Do Kwon
  - Arrested on 23 March 2023, awaiting extradition to South Korea.

Stablecoins Gone Wrong (1/2)

- Fail: Binance stopped BUSD
  - Collaboration with Paxos
  - Paxos ordered by the New York Department of Financial Services (NYDFS) to stop issuing BUSD
  - SEC threatened Paxos with legal action, claiming BUSD might be an unregistered security
  - Paxes / Binance halted BUSD, but without any loss of funds
- Role of Changpeng Zhao
- Fail: Facebook/Libre/Diem
  - Rise of L1 blockchains: Aptos und Sui
    - Common origins and shared codebase
  - Regulatory resistance and collapse of diem
    - Global opposition
    - International resistance
  - Outcome
    - Meta ultimately abandoned the Diem project
  - Continuation of Diem's Legacy
    - Aptos, Sui (mainnet), Linera (devnet)
- Mix of both: “Frax is the first stablecoin implementation to use the partial-collateral protocol that provides a two-token architecture” [link]

Stablecoins in CeFi / DeFi

- Asset-backed: CeFi
  - Coinbase, Binance, etc. need to buy fiat assets
  - Example:
    - Current supply: 50 USDT, collateral 50 USD
    - User buys 20 USDT for 20 USD

      → stablecoin issuer mints 20 USDT, has now 70 USD in collateral, 70 USDT in circulation
    - User sells 30 USDT → stablecoin issuer destroys 30 USDT, transfers 30 USD
    - Problem if assets not liquid → bank-run, not enough liquidity

- Cryto-backed: DeFi
  - MakerDAO/Sky, based on other stablecoins
  - If other currencies used → need over-collaterization
    - Problem: Supply 50 DAI, collateral 1 ETH (1 ETH=50 DAI)
    - User buys 25 DAI for 0.5 ETH (collateral 1.5 ETH)
    - Price drops of ETH to 1 ETH = 10 DAI
    - User sells 15 DAI, gets 1.5 ETH (collateral 0 ETH, but 60 DAI in circulation)
  - DAI collateralization ratio: 134% [link]
    - 429, cannot access at the moment
    - Sky stats

Stablecoins

- Why would anyone create and offer a stablecoin?
  - You have billion USDs on your account, no obligation to pay interest rate, but the issuer of the stablecoin gets an interest rate.
- Why would anyone use a stablecoin besides less volatility?
  - Borrowing / Leding with Stablecoins
    - Access a USD stablecoin without sellin ETH
      - Collateral!
    - Yield farming platforms may offer higher returns for USD stablecoins than for ETH
- Collateral similar to stablecoin principle
  - If value of ETH falls below X, contract will sell the collateral [link] in a vault [link]
    - Vault owner can also close vault (typical) [link]
    - (liquidation) collateral is put up for auction to cover the outstanding Dai + Liquidation Penalty
    - Outstanding Dai bought in auction will be destroyed, bidder gets collateral (for the bidding price), vault owner gets the rest.
    - "From May 8th to May 12th, the Maker Protocol experienced 90 liquidation auctions." [link]
- PSM: DAI ~wrapped USDC? [link]
  - Component to allow swap the native stablecoin for other accepted stablecoins at a 1:1 rate
- Stablecoin risks?
  - See UST

OST