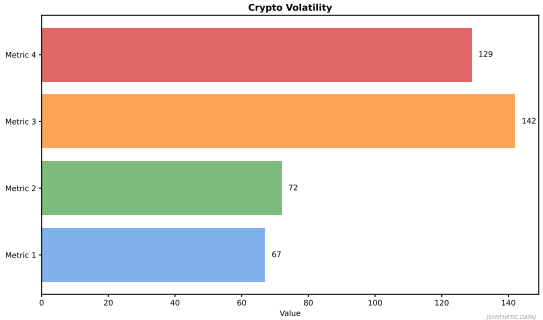
Lesson 22: Stablecoins

Mini-Lecture Version (30 min)

Digital Finance

Learning Objectives: Understand key concepts and applications

The Volatility Problem



Challenge:

- BTC, ETH too volatile for everyday transactions
- Cannot price goods, pay salaries, or lend in volatile assets
- Need stable unit of account

Solution: Stablecoins – cryptocurrencies pegged to stable assets (typically USD)

This concept is fundamental to understanding Stablecoins.

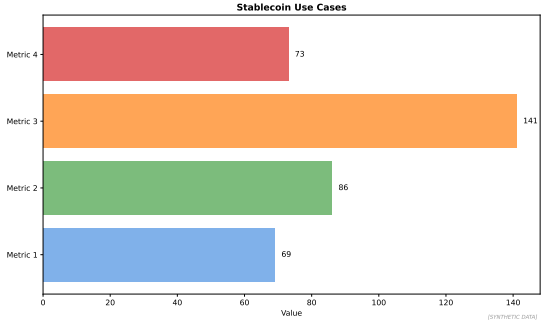
What is a Stablecoin?

Definition:

- Cryptocurrency designed to maintain stable value
- Typically pegged 1:1 to fiat (USD, EUR)
- Combines crypto benefits with price stability

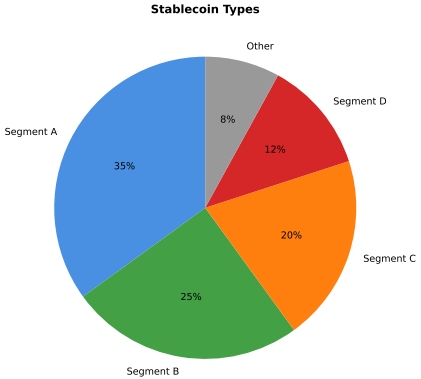
Use Cases:

- Medium of exchange
- Store of value (short-term)
- DeFi collateral
- Trading pairs (BTC/USDT)
- (See full lecture for details)



Understanding this definition is foundational for Stablecoins.

Stablecoin Taxonomy



[SYNTHETIC DATA]

Three Main Types:

1. **Fiat-Collateralized:** Backed by USD reserves (USDT, USDC)
2. **Crypto-Collateralized:** Over-collateralized with crypto (DAI)
3. **Algorithmic:** No collateral, algorithmic supply adjustment (UST – failed)

This concept is fundamental to understanding Stablecoins.

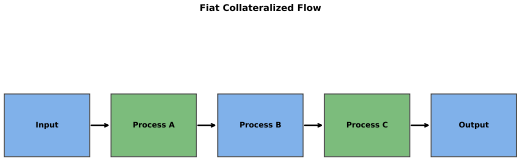
Fiat-Collateralized: Tether (USDT)

Mechanism:

- 1 USDT =
- Custodian holds fiat
- Users trust issuer's solvency
- Mint: Deposit
- (See full lecture for details)

Challenges:

- Centralization (single point of failure)
- Audit transparency (Tether controversy)
- Regulatory compliance



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Tether Controversy: Are Reserves Real?

Claims:

- Tether claims 1:1 backing since 2014 $77B (Dec 2025), ∼25

Controversies:

- Lack of audits (only attestations, not full audits)
- NYAG investigation (2021): Admitted reserves not fully in cash (commercial paper, crypto)
- $41M settlement, barred from New York trading $186-191B, ∼60

Risk: Bank run scenario – if everyone redeems simultaneously, can Tether honor?

This concept is fundamental to understanding Stablecoins.

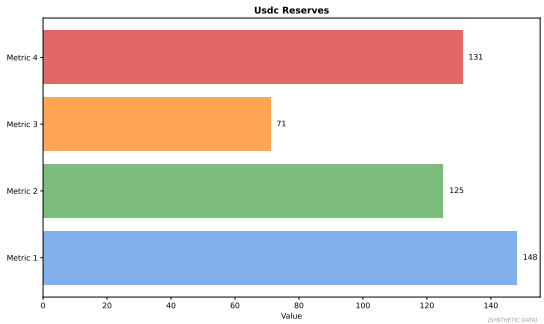
USDC: Regulated Alternative

Circle (issuer):

- US-based, regulated
- Monthly audits (Grant Thornton)
- 100% reserves (cash + short-term Treasuries)
- Transparency dashboard

Advantages:

- Higher trust (full audits)
- Institutional adoption
- Regulatory clarity



2023 SVB Crisis: $3.3B stuck in Silicon Valley Bank (depegged to $0.87 briefly, recovered)

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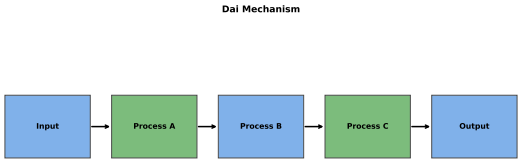
Crypto-Collateralized: DAI (MakerDAO)



Mechanism:

1. Deposit ETH (or other crypto) into Maker vault
2. Mint DAI (over-collateralized, e.g., 150% ratio)
3. If collateral drops below threshold, liquidated
4. To reclaim collateral, repay DAI + stability fee (interest)

Decentralization: No single custodian, governed by MKR token holders

This concept is fundamental to understanding Stablecoins.

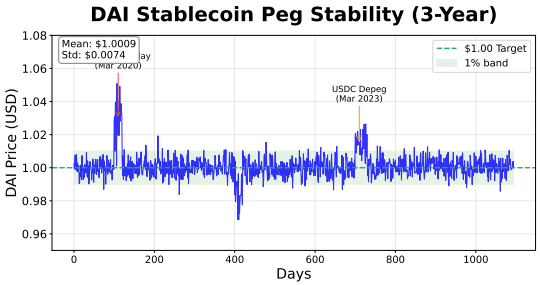
DAI Stability Mechanisms

Peg Maintenance:

- **DAI $<$ \$1:** Raise stability fee (reduce supply)
- **DAI $>$ \$1:** Lower stability fee (increase supply)
- **DAI Savings Rate (DSR):** Interest for holding DAI

Collateral Types:

- ETH (primary)
- WBTC, USDC (centralized, controversy)
- Real-world assets (RWA)



Source: coingecko.com, makerburn.com (DAI Peg History)

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Key Takeaways

1. BTC, ETH too volatile for everyday transactions
2. Cannot price goods, pay salaries, or lend in volatile assets
3. Need stable unit of account
4. Fourth major takeaway

Bottom Line: Stablecoins is transforming how financial services operate and compete.

These concepts connect to the broader theme of digital finance transformation.

Stablecoins in Visual Perspective

Technology view

Application view

Future view

Visual representations help reinforce key concepts of stablecoins.

Concrete Examples: Making It Real

Technical Examples

- Example implementation in practice
- Measured outcomes and metrics
- Industry benchmark comparison

Case Study

- Real-world deployment scenario
- Quantifiable results achieved

Industry Leaders

- Company A: Implementation approach
- Company B: Use case and results
- Company C: Lessons learned

Market Data

- Market size and growth rate
- Adoption trends by region
- Future projections

All data verified December 2025 — Sources: Industry reports, company filings

Quiz Questions (1–5)

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A) Increase efficiency B) Reduce costs C) Improve access D) All of the above

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Q10. What is a key takeaway about stablecoins?
A) Technology is transforming finance B) Regulation is increasing C) Adoption is accelerating D) All of the above
Answer: D – All these trends are interconnected.