Stablecoins & CBDCs

Pre-Class Discovery Handout

Lesson 07 · Complete before class · 25–30 minutes

Activity 1: Explore Stablecoin Markets — 10 min

Visit `https://www.coingecko.com/en/categories/stablecoins` and explore. Answer:

1. What are the top 5 stablecoins by market cap? What blockchain are they primarily on?
2. Pick one stablecoin — what is its 24h trading volume vs market cap ratio?
3. Check the price chart — has it ever significantly de-pegged? When?
4. Compare USDT and USDC — what differences do you notice in reserve reporting?

Bonus: Compare stablecoin dominance chart over the last 2 years.

Activity 2: MakerDAO Vault Investigation — 5 min

Look up MakerDAO on `https://defillama.com/protocol/makerdao`. Answer:

1. What collateral types does MakerDAO accept?
2. What is the current collateral ratio requirement for ETH vaults?
3. What is the DAI Savings Rate (DSR)?
4. How much total collateral is locked in MakerDAO?

Collateral Type	Min Ratio	Stability Fee	TVL

Activity 3: CBDC Tracker Research — 10 min

Visit `https://www.atlanticcouncil.org/cbdctracker/` and complete the table.

CBDC	Status	Architecture	Privacy Model	Pilot Scale
China e-CNY				
EU Digital Euro				
US Digital Dollar				
India e-Rupee				

Activity 4: Design Your Stablecoin — 5 min

Fill in the form below. Bring your design to class for discussion.

1. **Stablecoin Name:** _____
2. **Peg Target:** ☐ USD ☐ EUR ☐ Gold ☐ Basket ☐ Other
3. **Mechanism:** ☐ Fiat-backed ☐ Crypto-backed ☐ Algorithmic ☐ Hybrid
4. **Collateral Ratio:** _____%
5. **Reserve Transparency:** ☐ Daily attestation ☐ Monthly audit ☐ Annual ☐ None
6. **Target Use Case:** ☐ Payments ☐ DeFi ☐ Cross-border ☐ Savings
7. **Biggest Risk:** ☐ De-peg ☐ Regulatory ☐ Bank run ☐ Smart contract

Key Terms

Term	Definition
Stablecoin	A cryptocurrency designed to maintain a stable value relative to a reference asset (usually USD). Achieved through collateral reserves, algorithmic mechanisms, or a combination.
Peg	The target price a stablecoin aims to maintain (e.g., 1 USDC = 1 USD). Maintaining the peg requires active mechanisms such as redemption guarantees or supply adjustments.
De-peg	When a stablecoin's market price diverges significantly from its target peg. Can be temporary (USDC during SVB) or permanent (UST collapse).
Collateral Ratio	The ratio of collateral value to stablecoin value issued. Fiat-backed: 100%. Crypto-backed: typically 150%+ to absorb volatility.
Over-collateralization	Requiring more collateral than the value of stablecoins minted (e.g., $150 ETH to mint $100 DAI), providing a safety buffer against price drops.
Liquidation	The forced sale of collateral when its value drops below the minimum ratio, protecting the protocol from undercollateralization.
CDP / Vault	Collateralized Debt Position. A smart contract that locks crypto collateral and mints stablecoins against it. Used by MakerDAO for DAI.
Algorithmic Stablecoin	A stablecoin that maintains its peg through algorithmic supply adjustments rather than holding collateral reserves. Most have failed historically.
Death Spiral	A self-reinforcing feedback loop where loss of confidence causes selling, which further breaks the peg, causing more selling. Exemplified by Terra/LUNA.
CBDC	Central Bank Digital Currency. A digital form of fiat money issued directly by a central bank as legal tender, distinct from commercial bank deposits.
Wholesale CBDC	A CBDC restricted to financial institutions for interbank settlement, improving speed and reducing counterparty risk in large-value payments.
Retail CBDC	A CBDC available to the general public for everyday transactions, potentially replacing or supplementing physical cash.
Seigniorage	The profit a currency issuer makes from the difference between face value and production cost. In algorithmic stablecoins, captured when new tokens are minted above peg.
Peg Stability Module (PSM)	A MakerDAO mechanism allowing 1:1 swaps between DAI and approved stablecoins (like USDC) to maintain the DAI peg with minimal slippage.