OFFICE OF FINANCIAL RESEARCH

Potential threats to financial stability from digital assets

Financial Research Advisory Council

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Outline

Potential threats to financial stability from digital assets

1. Framing the issue
2. OFR activities to date
3. Guidance and input

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1. Framing the issue
   - definitions and taxonomy
   - high-level findings
   - leading cases
2. OFR activities to date
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Definitions

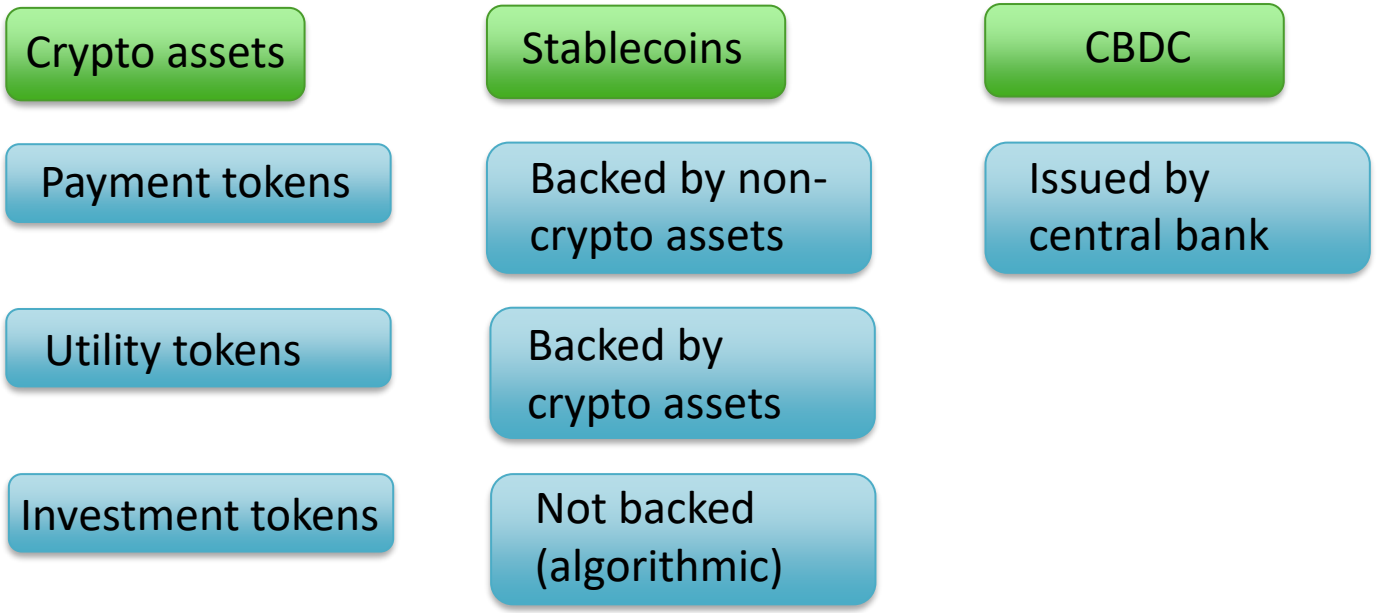
Potential threats to financial stability from digital assets

… and from digital finance more broadly

- Digital asset: a representation of value that is stored and transferred digitally, using cryptography and distributed ledger technology (DLT) or similar
  - broad definition; includes many different use cases
  - focus on those related to payments and financial services
- Digital finance: platforms and protocols through which digital assets are stored, traded, and transferred

Taxonomy

- Digital assets:



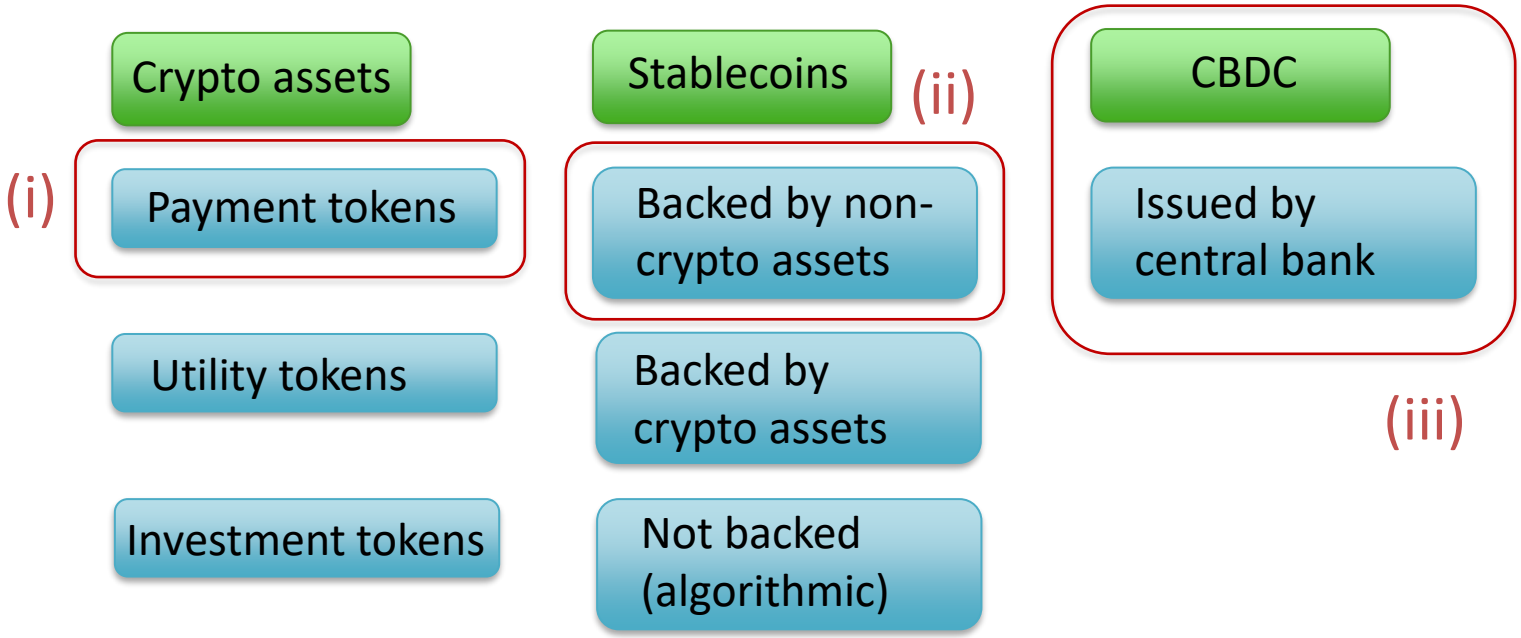
- Digital finance:
  - centralized: exchanges, custodians, ETFs, etc.
  - decentralized: decentralized trading protocols; DeFi

High-level findings

- Despite the novelty and rapid innovation in digital assets, many of the financial stability risks they raise are familiar
  - new ways of performing a given economic function bring many of the same risks as traditional arrangements
- These risks may be heightened in the new environments
- These risks are currently more difficult to measure and monitor
  - reporting and supervisory arrangements for traditional arrangements were developed over time
- In addition, some novel risks do arise
  - potential shifts in structure of the monetary/financial system

Leading cases

- Digital assets:



- Digital finance:
  - centralized: exchanges, custodians, ETFs, etc.
  - decentralized: decentralized trading protocols; DeFi (iv)

(i) Unbacked crypto assets

- One view of unbacked crypto assets: similar to commodities
  - "outside" asset; not a liability of any individual or institution
  - somewhat like gold, oil (and perhaps real estate)
- Financial stability risks could come through familiar channels:
  - direct holdings of financial institutions and individuals (which may be leveraged)
  - derivatives contracts
  - indirect exposures via counterparties
- Particular concern: risks to systemic institutions
- Evaluate financial stability risks by monitoring these exposures

(i) Unbacked crypto assets (cont.)

New challenges:

- Obtaining and evaluating the most relevant data
  - rapid growth in adoption, offshore and unregulated venues
  - leverage and exposures may “hide in the shadows” (as usual)
- Crypto assets likely bring additional risks
  - price volatility may be much higher (esp. extreme outcomes)
  - heightened cybersecurity, operational, and regulatory risks
  - novelty of assets/venues: evaluating risks may be difficult for participants

(ii) Stablecoins

- Stablecoins backed by non-crypto assets:
  - aim to offer redemption of coins at or near par
  - while holding assets with some risk, imperfect liquidity
- Resemble prime money market mutual funds in key respects
- Familiar risk: runs by investors out of the fund/coin
  - issue arose for prime institutional MMFs in 2008 and 2020
  - creates spillover effects for commercial paper, other short-term funding markets
- Becoming significant in size
  - market cap. of Tether: $82 billion, USD Coin: $51 billion

(ii) Stablecoins (cont.)

New challenges:

- Stablecoin asset holdings are much more opaque than for MMFs
  - and, in some cases, the subject of controversy
  - MMFs have a developed regulatory framework with mandated disclosure of assets
    - allows OFR to create the MMF monitor, for example
- Stablecoins are a primary focus of regulators' attention
  - report by President's Working Group and others in November
- OFR will continue to monitor developments in this area

(iii) CBDC

- Central bank digital currencies (CBDC) are still largely in the discussion/ early pilot phase
  - discussion papers issued by Fed, ECB, Bank of England, etc.
  - the form a US or Euro CBDC would take is still very uncertain
- Would raise (at least) two types of financial stability risk
  - If bank depositors shift funds into CBDC in normal times,
    - how will banks respond? by taking more risk?
  - shifting to CBDC might be particularly attractive to depositors in periods of financial stress
    - would CBDC make banks more susceptible to runs?

(iii) CBDC (cont.)

New challenges:

- Risks here are more novel; perhaps more difficult to evaluate
  - CBDC does not have clear analog in current arrangements
  - somewhat like government money market mutual funds?
    - but easy to use in transactions; could be more popular
- Can look for similar arrangements in other countries
  - Bahama's Sand Dollar is operational, and China's DCEP has been in advanced pilots
  - but they operate in very different financial systems
    - DCEP competes with Alipay and WeChat pay more than with bank deposits, for example

(iii) CBDC (cont.)

- Relevant theoretical frameworks and historical debates do exist
- Fundamental issue: use of public vs. privately-created money
  - long-running historical debates about the appropriate role of the public sector in creating money
  - modern incarnation: should the need for tokenized money be met by stablecoins or CBDC?
- CBDC may also be similar to a narrow-banking arrangement
  - a bank that issues deposits while holding 100% cash reserves is like a "synthetic CBDC" (IMF)
  - many historical proposals for narrow banks to promote financial stability

(iv) DeFi

- Broadly speaking, DeFi aims to replace traditional intermediaries with automated protocols
  - includes market making, collateralized lending, and more
  - new terminology: liquidity pools, wrapped assets, staking
  - but aiming to solve traditional economic problems
- Result: many of the risks that arise with DeFi are familiar
  - but may be exacerbated (ex: higher leverage)
- Area of rapid (and interesting) innovation
  - potential to enhance efficiency in some areas

(iv) DeFi

New challenges:

- Current regulatory and supervisory framework is designed for existing arrangements and institutions
  - reporting standards and data collection
  - capital, liquidity, and risk management standards
    - banks and other regulated institutions provide shock absorbers in the financial system
  - activities without these safeguards bring heightened risk
- Identifying emerging risks in this fast-changing landscape

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1. Framing the issue
2. OFR activities to date
   - market monitoring
   - long-term research projects
3. Guidance and input
   - four questions

(i) Monitoring

- OFR is integrating digital assets into its established monitoring processes
- Internal working group on Crypto/Digital Assets
  - regularly review market developments
  - discuss recent outside research on digital assets
  - looking into accounting treatment of digital assets, etc.
- 2021 Annual Report to Congress included:
  - digital assets as part of evaluation of market risk
  - discussion box on risks related to stablecoins and CBDC

(ii) Long-term research projects

"Making Money" by Sharon Ross (with Gary Gorton & Chase Ross)

- Emphasize that successful forms of *money* are accepted at par
  - people do not investigate its value ("no questions asked")
- Develop a model of how private assets can attain this status
  - a combination of technology, reputation of the issuer
- Use the model to compare the development of:
  - banknotes in the pre-Civil War period
  - modern stablecoins
- Analysis emphasizes the difficulty of "making" money

(ii) Long-term research projects (cont.)

"Should Central Banks Issue Digital Currency?" by Todd Keister (with Daniel Sanches) forthcoming in the *Review of Economic Studies*

- Analyzes macroeconomic effects of a CBDC that competes with cash and/or bank deposits as a medium of exchange
- A CBDC that competes with deposits will raise bank funding costs
  - lower bank deposits, bank-funded investment
- But may nevertheless be desirable
  - increases total supply of liquid assets in the economy
  - important that CB not make CBDC *too* attractive (could require fees/negative interest rates)

(ii) Long-term research projects (cont.)

"CBDC: Stability and Information" by Todd Keister (with Cyril Monnet)

- Develops a model of runs into CBDC
- Captures the commonly-expressed concern
  - all else equal, the ability to hold CBDC makes uninsured depositors more likely to run on their bank
- However, shows there are countervailing forces
- Most notably: observing flows into CBDC may help regulators identify problem areas in real time
  - result: faster policy reaction that *improves* financial stability

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Questions

1. On the conceptual frameworks:
   - what type risks might be overlooked by these analogies to existing arrangements?
   - what blind spots could arise when thinking about digital assets in these (traditional) ways?

2. How is innovation in digital assets pressuring traditional financial institutions to respond?
   - what indirect risks may arise as traditional institutions try to compete with fintech firms and others?
   - *where* are these indirect risks most likely to arise?

Questions (cont.)

3. Data and reliability:
   - how are traditional institutions evaluating value/risks?
   - what sources are they looking at for data on market activity, and how do they evaluate what data is reliable?

4. Market monitoring: where to look?
   - are traditional institutions more likely to engage with digital assets directly or through intermediaries/custodians?
   - are there certain intermediaries that are widely used?
   - are firms using or accepting digital assets directly as collateral?

Thank you