Can Stablecoins be Stable?

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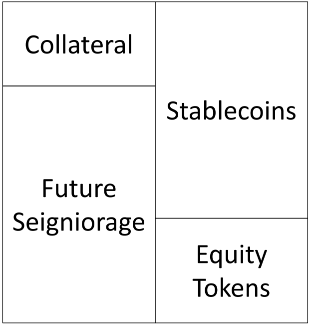
Discussion by M. Bouvard (TSM & TSE)

So can they be stable?



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$\Rightarrow$ Subject to demand shock (A_t):

- Suppose equity tokens wiped out

$+$ Limited liability

$\Rightarrow$ No ressources available to maintain the peg

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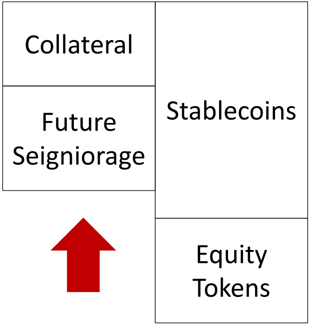

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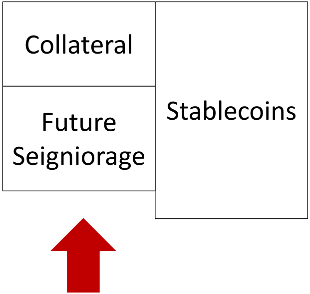

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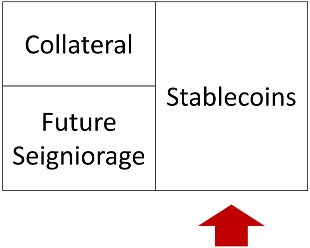

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- Insight 1: only fully collateralized stablecoins can be truly stable.

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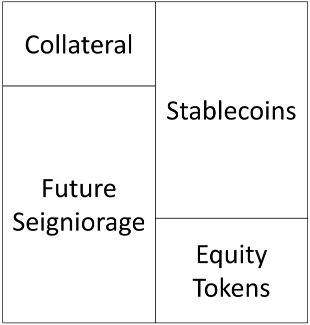

- Stablecoins are durable

$\Rightarrow$ Future issuance requires demand for stablecoins to increase over time.

- Insight 2: partially collateralized stablecoins are viable only if demand grows.

So collateral is very important! But is it observable?

- Current framework provides insights (not suggesting an extension here)
- Basic problem: ex-post deviation to lower collateral level
- (Slightly) more sophisticated problem: ex-post deviation to risky collateral:
  - From stability point of view, collateral should not be correlated or even negatively correlated with demand shock A_t
  - Ex-post equity holders with limited liability may have opposite incentives $\sim$ Risk-shifting.
    $\rightarrow$ Example: hold as collateral equity tokens (or other tokens).
- Note: decentralization makes the pb of collateral verifiability worse...
- Trade-off: overcollateralization with tokens (DAI) vs centralized collateralization with “real” collateral (Tether)

Instruments

- Platform uses both "open market" operations and interest rates to maintain the peg $\rightarrow$ why two instruments?
- Naive intuition: trading away deviations from the peg should be enough to maintain it.
- But not really:
  - Token holders need to be compensated for opportunity cost of holding token:
    $$r - I(a)$$
    $\rightarrow$ cannot be done through capital gain because of peg
  - Token holders need to be compensated for risk of losing the peg
    $$\lambda(1 - \mathbb{E}[p(Sa)])$$
- You should emphasize these intuitions more!
  (How do we interpret Tether not paying interest? High convenience yield or low debasement risk?)

Implementation

- Stability requires the policy to react to the demand shock A_t.
- Even the no-commitment case, requires commitment to an interest rate that depends on A_t (in fact quite important to discipline the platform prevent deviations).
- Hard to implement in practice, and hard to commit to:
  - Not directly observable
  - Maybe can be inferred from some prices...
  - ... but in any case not native on-chain information

  $\Rightarrow$ hard to implement with smart contracts (oracle)
- Decentralization removes the commitment requirement but would introduce other costs discussed earlier.

Conclusion

- Useful framework to think about stability/implementation issues for stablecoins
- Some insights likely valid beyond stablecoins (general problem of pegging a currency to another currency)
- My personal takeaway: creating private stablecoins is likely costly (overcollaterlization or going back to trusted third party).
- Maybe a case for on-chain CBDC?