Discussion
Stablecoin Runs and the Centralization of Arbitrage

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This Paper

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  - Special type of "deposit" that pays no interest
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- ▶ Stablecoin = ETF + MMF
  - ▶ ETF: stablecoins trade in secondary market
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    only by arbitrageurs
- ▶ Main results:
  - ▶ Facts about stablecoins
  - ▶ Theoretical model
- ▶ Nice mix of facts and theory!

Outline of Discussion

- ▶ Summarize paper
  - ▶ Facts
  - ▶ Model
- ▶ Comments/Remarks/Questions
  - ▶ Many open questions!

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      (USDT deviates more than USDC)
    - #4 Stablecoins hold different portfolios
      (USDT holds less liquid assets than USDC)

Double Bank Run?

Stablecoin USDC breaks dollar peg after revealing $3.3 billion Silicon Valley Bank exposure

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The coin broke its 1:1 dollar peg and fell as low as $0.88 early Saturday, according to market tracker CoinGecko. It recovered slightly to trade around $0.90.

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Used in cryptocurrency trading, they have surged in value in recent years. USDC is the second-biggest stablecoin with a market cap of $37 billion. The largest, Tether, has a market cap of $72 billion, according to CoinGecko.

USDC's price usually holds close to $1, making Saturday's drop unprecedented. According to CoinGecko data, its previous all-time low was around $0.97 in 2018, though in 2022 it fell just below $0.99 when cryptocurrency markets were roiled by the collapse of crypto hedge fund Three Arrows Capital.

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- ▶ <u>Arbitrageurs</u>: (finite number n)
  - ▶ S purchasing capacity
  - ▶ Redeem from issuer: liquidated assets at 1 pay $1 - \phi$
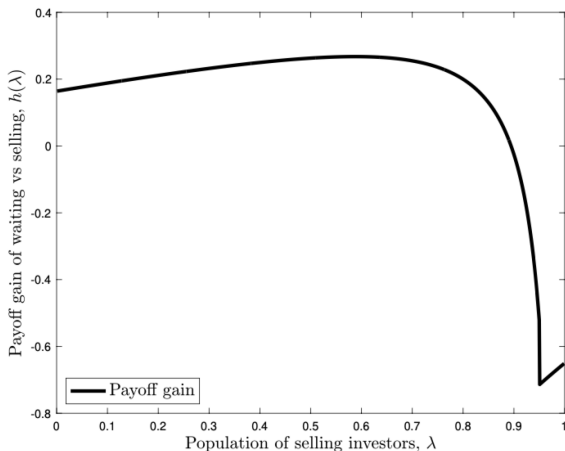- ▶ <u>Stablecoin issuer</u>: receives $R(\theta) - 1$

Model

▶ Secondary market price is

$$q(\lambda) = \begin{cases} 1 - \frac{n-1}{n-2}\frac{\lambda}{S}, & \lambda \leq 1 - \phi \\ \frac{1-\phi}{\lambda} - \frac{n-1}{n-2}\frac{\lambda}{S}, & \lambda > 1 - \phi \end{cases}$$

   ▶ Decreasing in selling pressure λ and illiquidity ϕ
   ▶ Increasing in buying capacity S and number of arbitrageurs n

Strategic Incentives

- ▶ Strategic substitutability: other investors sell ⇒ depress price ⇒ reduces incentive to sell
- ▶ Strategic complementarity: most investors sell ⇒ costly liquidations ⇒ increases incentive to sell

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    1. illiquidity ϕ (typically)
    2. number of arbitrageurs n
    3. purchasing capacity of arbitrageurs S
- ▶ #2 and #3 are <u>definitely</u> surprising
    - ▶ They rely on strategic behavior (arbitrageurs redeem more, so prices more sensitive to sales)
- ▶ **Comment**: unpack direct effect vs. strategic response
- ▶ **Comment**: robustness of the results

Concentration of Arbitrageurs + Calibration

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▶ **Comments:**

   1. Little intuition in the paper
   2. What is the right objective for issuer?
   3. Is it obvious that this problem has an interior solution?
   4. ϕ and n should be jointly determined
   5. Is the choice of $n^\star$ by the issuer efficient?

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- ▶ Calibration exercise
  - ▶ Between 1% and 3% run probabilities (annual?)
- ▶ **Comment:** how seriously should we take these numbers?

Comments/Remarks/Questions

1. **Why would anyone invest in stablecoins?**
   - Dominated by fiat currency/bonds/etc.
   - It has to be due to
     - Non-pecuniary benefits (liquidity, tax evasion, etc.)
     - Irrationality/sentiment (see e.g. Gorton et al 2023 on leverage and speculative demand)

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3. **Why are arbitrageurs not fully closing the arbitrage gap?**
   - Market power (in the model "double auction")
   - Forward looking behavior (future seignorage)
     - Trading off smaller gains today for future gains
   - Why would arbitrageurs let stablecoin be worth *more* than 1$?
     - No liquidations involved
   - What if arbitrageurs decide not to participate?

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5. **Is there a role for regulation?**
   - ▶ Definitely! Coordination failures call for regulation
   - ▶ Subtle questions:
       - ▶ Efficient number of arbitrageurs $n^\star$
       - ▶ Efficient redemption mechanisms
       - ▶ Deposit insurance? (these are deposits after all!)
       - ▶ Asset/liability side regulation

Conclusion

- Important topic
    - Digital assets deserve careful scrutiny
    - Pegged securities are run-prone $\Rightarrow$ Financial stability concerns
- This paper puts together
    - Useful facts on stablecoins
    - Model to illustrate arbitrage mechanism

    Valuable contribution!

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Valuable contribution!

- ▶ Still many central questions unanswered ⇒ Scope for further research
  - ▶ Empirical
  - ▶ Theoretical ⇒ Regulation?