# Discussion

## Bank Runs, Fragility, and Credit Easing

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2nd Bank of Canada Workshop on Monetary Policy Research
September 21, 2022

# This paper

- Dynamic general equilibrium model of bank runs
- Paper has three parts
  1. Environment **without** self-fulfilling **runs**/crises
  2. Environment **with** self-fulfilling **runs**/crises
  3. Insights for **policy** contrasting both cases
     - Policies considered: Default decision + Credit easing
     - Central insight: optimal policy depends on 1) vs. 2)
     - e.g., credit easing may be undesirable in the absence of a run

Really detailed and careful analytical work!

# Outline

- Big picture
- Revisit three parts
  - No runs
  - Runs
  - **Welfare**
- Final comments/remarks

# Big picture

- Bank runs/coordination failures are an important phenomenon
- Benchmark framework: Diamond/Dybvig 83
  - (Typically) Demandable non-contingent deposits
  - Runs/failures are triggered by depositors
  - Mostly static models $\Rightarrow$ Hard to make dynamic

# Big picture

- Bank runs/coordination failures are an important phenomenon
- Benchmark framework: Diamond/Dybvig 83
  - (Typically) Demandable non-contingent deposits
  - Runs/failures are triggered by depositors
  - Mostly static models $\Rightarrow$ Hard to make dynamic
- This paper: closer to Kiyotaki/Moore 97
  - With default option shaping borrowing constraint
  - Runs triggered by lenders (similar to Cole/Kehoe 00)

# Environment

- Kiyotaki/Moore 97
  - Risk neutral banks and creditors
  - Linear technology for banks/DRS technology for creditors
  - Capital moves from banks to creditors / short-term debt
- Amador/Bianchi 22
  - Risk averse (log) banks + Risk neutral creditors
  - Linear technology for banks (worse after default)
  - Capital moves within banks / short-term debt
  - Option to default (with perfect foresight) generates endogenous borrowing constraint

$$b_{t+1} \leq \underbrace{\gamma_t}_{\text{endogenous}} p_{t+1} k_{t+1}$$

    - Counterpart of "issuance Laffer curve"
  - At $t = 0$, indifferent banks may decide to default

# Environment without runs

1. Partial equilibrium: prices as given, default/borrowing constraint endogenous
   - Scope for multiple stationary solutions
   - This economy features a dynamic complementarity via the borrowing constraint
     - Loose constraint today $\Rightarrow$ Lever up more today $\Rightarrow$ Higher returns tomorrow, fewer defaults $\Rightarrow$ justifies loose constraint
     - This channel is shut down
2. General equilibrium

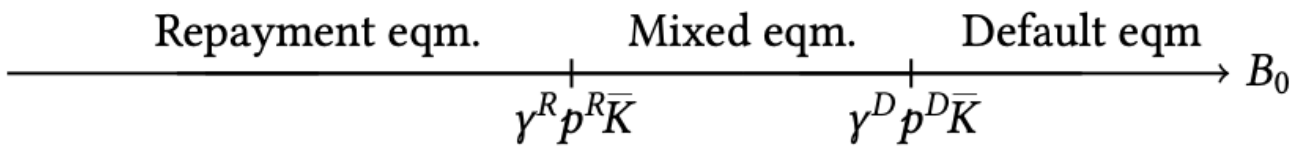


Figure 2: Types of equilibrium depending on $B_0$

- Important that thresholds do not cross

# Environment with runs

- Before: a bank with cash flows that guarantee repayment obtains funding
- Now: Cole/Kehoe-style runs
  - If lenders decide not to lend $\Rightarrow$ Failure (if vulnerable region)
  - If lenders decide to lend $\Rightarrow$ No Failure
- Larger region for stationary default equilibrium
  - Tighter borrowing limits

# Welfare

- Bank's welfare: ($\phi$ is share of defaulting banks)

$$W = \underbrace{(1-\phi)\, V^R(p)}_{\text{repay}} + \underbrace{\phi V^D(p)}_{\text{default}}$$

- Welfare assessments of arbitrary policy ($\theta$):

$$\frac{dW}{d\theta} = \left(V^D(p) - V^R(p)\right)\frac{d\phi}{d\theta} + (1-\phi)\underbrace{\frac{dV^R(p)}{dp}}_{u'\left(c^R\right)\Delta k^R}\frac{dp}{d\theta} + \phi\underbrace{\frac{dV^D(p)}{dp}}_{u'\left(c^D\right)\Delta k^D}\frac{dp}{d\theta}$$

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- Two distinct rationales for intervention (which may be **costly**)

1. **Coordination Failure**
   - Economy without runs: $V^D(p) - V^R(p) = 0$ (envelope thm.)
   - Economy with runs: $V^D(p) - V^R(p) < 0$
2. **Distributive Pecuniary Effects**
   - DK18: i) differences in MRS + ii) net trade positions + iii) pecuniary effect of policy
   - $\uparrow \phi \Rightarrow$ More capital sold $\Rightarrow p \downarrow \Rightarrow$ Hurts sellers/defaulters + benefits repaying banks with high $u'\left(c^R\right) \uparrow$
   - Fire sale flavor (Lorenzoni 08)

# Welfare

- Paper considers two specific policies
  1. Change in $\phi$ (share of defaulters)
  2. Credit easing: government purchases of capital with improductive technology
     - **Question:** Is credit easing the best term to capture purchases of capital?
- Key practical insights
  - Increasing $\phi$ will be typically beneficial in economy without runs
  - Reducing $\phi$ will be typically beneficial in economy with runs
  - Similarly ambiguous conclusions with credit easing

# Final Comments/Thoughts

1. **What determines the desirability of an intervention?**
   - Optimal intervention depends on run vs. no-run environment $\Rightarrow$ True!
   - But intervention is identical conditional on $V^D(p) - V^R(p)$ and $MRS \cdot \Delta k \cdot dp$
     - "Sufficient statistics"
2. **Natural next steps**
   - Allow for defaults in equilibrium outside of $t = 0$
   - Introduce risk
   - Quantification

# Conclusion

- Very interesting and carefully executed paper
- Main message
  - Run vs. no-run may have different implications for which policies are desirable
  - Subtle answers
    - Coordination Failure + Distributive Effects + Cost of Intervention
- I look forward to seeing the dynamics pushed even further!