# Discussion

# Delayed Crises and Slow Recoveries by Xuewen Liu, Pengfei Wang, and Zhongchao Yang

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## This Paper

#### Broader Motivation

- Expansions and crises are driven by coordination
- ► Not all agents are aware of economic conditions ⇒ Synchronization problems (AB02,03)

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- Model of investment in two sectors (speculative and traditional)
- Banks must decide when to "exit"
- High speculative payoffs only when many investors active
- Crisis eventually happens  $\Rightarrow$  Fire sale/downward sloping price

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### Synchronization Problem + Fire Sales

#### Main result: normative analysis

- Planner would like to "exit" before than banks
- Why? Pecuniary externalities in crises

# Outline of the paper

- 1. Model with exit
- 2. Model with entry and exit
- 3. RBC version with entry and exit

Continuous time, measure one of banks

- Two sectors
  - ► Traditional: flow *c*<sup>*L*</sup>
  - ▶ Speculative: flow  $c^{H}$  if  $\omega(t) \ge \underbrace{S(t)}_{\bullet}$ , 0 (crisis) otherwise

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- $\omega(t)$  is share of investors in speculative sector, S(t) is fundamental
- Shock hits the economy at t<sub>0</sub>, S (t) starts to go up
   It becomes harder and harder to sustain the high payoff

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- **Remark**: there is some probability of refinancing p(L)
  - Is it needed?

# Equilibrium

• Crises happens at  $t_0 + \zeta$ , with

$$\zeta\left(\tau\right) = \frac{\tau + \eta}{1 + \frac{\kappa}{\beta}\eta}$$

- $\blacktriangleright$  Obviously,  $\zeta'\left(\tau\right)>0$  if agents wait more to exit, the crisis happens later
- $\blacktriangleright$  Paper shows that liquidation is lower when  $\zeta$  is higher,  $\ell'\left(\zeta\right)<0$

### Normative Results

#### Constrained planner's problem

- Chooses waiting length au internalizing effect on prices  $\Rightarrow au^{SB}$
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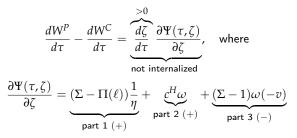
- Banks choose waiting length au taking prices as given
- Remark: welfare here is far from obvious
  - This is a strategic environment, no welfare theorems to help
  - Cooper/John 88: quite the opposite
  - Equilibria are often Pareto ranked in coordination games

► Main result: compare SB with CE

$$\frac{dW^{P}}{d\tau} - \frac{dW^{C}}{d\tau} = \underbrace{\underbrace{\frac{\partial \zeta}{\partial \zeta}}_{\text{not internalized}}^{\geq 0} \underbrace{\frac{\partial \Psi(\tau, \zeta)}{\partial \zeta}}_{\text{not internalized}}, \quad \text{where}$$

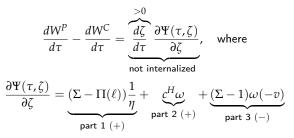
$$\frac{\partial \Psi(\tau, \zeta)}{\partial \zeta} = \underbrace{(\Sigma - \Pi(\ell))\frac{1}{\eta}}_{\text{part 1 (+)}} + \underbrace{c^{H}\omega}_{\text{part 2 (+)}} + \underbrace{(\Sigma - 1)\omega(-v)}_{\text{part 3 (-)}}$$

► Main result: compare SB with CE



Parts 1 and 2 are coordination externalities (non-pecuniary)
 Part 1 captures banks that escape failure
 Part 2 captures banks that earn c<sup>H</sup> for a bit longer

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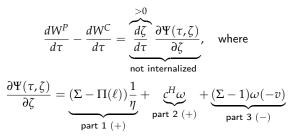


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- Why the first two terms?
  - The speculative sector is good!  $c^H > c^L$
- Part 3: distributive pecuniary externality (GP86, L08, HK16, DK18, ...)
  - 1. Differences in valuation  $(\Sigma 1)$
  - 2. Total sale  $\omega$

3. Price sensitivity 
$$v \equiv \frac{dq}{d\zeta}$$

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- 3. It may helpful to provide a characterization of the first-best
  - I think the first-best solution is to set:

$$\omega\left(t\right)=S\left(t\right)$$

- Keep as many banks in as you can so that the music doesn't stop (at some point ω (t) = 1)
- Connect more first-best and second-best?

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- 6. The RBC extension is interesting by itself
  - It may be worth developing in a different paper
  - Connection to macro literature on coordination and business cycles
    - Small modern literature
  - Slow recoveries is in the title, but it only comes at the very end!