Fire sales, inefficient banking and liquidity ratios
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Fire sales generate a pecuniary externality that reduces welfare.

These welfare costs arise even if households are ex ante identical.

Reason: Due to a price effect, there is a wealth redistribution from early to late consumers.

If fire sales do not happen, the redistribution towards impatient can be too high.
Policy conclusion:
- Liquidity ratios on banks are not sufficient to mitigate the welfare loss
- Ex post policy is not able to mitigate the inefficiency
- How can we make banking more efficient in the present of aggregate liquidity shocks

⇒ Highly relevant paper
Framework similar to Diamond and Dybvig (JPE, 1983):

- Fraction of early types ($\theta$) is stochastic
- Consumers can transfer their endowment to the future only by investing in banks or funds
- Liquidation value of long-term project is endogenous (the fire sale price)
- No sequential service constraint
Model Framework

$\textbf{Consumer}$ choose:
- Investment in banks
- Investment in funds

$\textbf{Bank}$ choose:
- Promised repayment
- Investment in early assets
- Investment in storage

$\textbf{Fund}$:
- Collects consumers’ investment
- Buys banks’ investment in early assets at price $P$
- Investment in late assets

$\textbf{Bank}$ repays early types

$\textbf{Early types}$ consume

$\textbf{Returns}$ realize

$\textbf{Late types}$ consume
• Fund cannot invest in $t = 0$
• Thus, she holds back liquidity by assumption
• The market incompleteness of having too little wealth available in $t = 1$ is quite important for your result
  $\Rightarrow$ Need to endogenize fund’s behavior
• If the fund knows that a lack of liquidity leads to fire sale prices, she would have an incentive to run short of liquidity
• Could the corner solution result from $R^L$ sufficiently large?
Discussion of Assumptions
Patient Consumers’ Behavior

- Late consumers never withdraw in $t=1$
- They could mimic early consumers and use their funds to buy assets / finance the fund
- For small liquidity shocks, this additional liquidity would have an impact on the asset’s price
  $\Rightarrow$ This could discourage from this strategy
- Assume that liquidity shock is too large such that funds have not enough resources to buy all early assets
- Moreover, mimicking early consumers endogenizes the liquidity shock
  $\Rightarrow$ If they know that withdrawing leads to fire sales (and a redistribution from early to late consumers), they should always mimic being an early type
Bank’s maximization problem:

$$\mathcal{L} = E_\theta[\theta u(c_1) + (1 - \theta)u(C_2)] + \mu[D - L - S]$$

As in Diamond/Dybvig, bank maximizes the utility of households

However, in D/D, households deposit their entire endowment

Here, if $\theta \geq \bar{\theta}$, $C_2 = c^B + \frac{\pi(\theta)}{1-\theta}$ with $\pi(\theta) = R^E S$

Why does the bank care about the fund’s clients?
Discussion of Assumptions: Existence of Banks and Funds

- Why do you need banks and funds?
- Your world without bank and fund:

\[ C_1 = (1 - I) + PR^E I \]
\[ C_2 = \frac{(1 - I)}{P} + R^E I \]

with

\[ P^F = \frac{1}{R^E} \]

and

\[ P^* = \frac{L}{R^E} \]

- Would a bank improve such a financial market solution?
Thank you for your attention!