Discussion of "Bank Liquidity, Interbank Markets, and Monetary Policy"

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Outline

- Summary
- Comments

Starting Point

- Continuum of banks
- Each bank has a continuum of customers
- Customers consume at date 1 with prob. λ and 2 with prob. $1-\lambda$, privately observed liquidity shocks
- A short-term asset with return 1
- A long-term asset with return $r > 1$

First Case: Ex post Identical Banks

- Assume that each bank has the same fraction of impatient consumers λ

$$Max\ \lambda u(c_1) + (1-\lambda)\, u(c_2)$$
$$s.t. \begin{cases} \lambda c_1 \leq 1-\alpha \\ (1-\lambda)\, c_2 \leq r\alpha \\ c_2 \leq c_1 \end{cases}$$

Optimum

$$u'(c_1) = ru'(c_2)$$

Second Case: Ex post Heterogeneous Banks, No Aggregate Uncertainty

- Suppose now that bank i draws a fraction of impatient consumers λ_i with
$$\int \lambda_i di = \lambda$$
- Banks can only trade funds in a Walrasian interbank market.

  Cost of funds R.
- In equilibrium, indifferent between cash and LT investment:
$$R = r.$$

Second Case: Ex post Heterogeneous Banks, No Aggregate Uncertainty

- Suppose c_1 cannot be contingent on λ_i.
- Let b_i denote the net borrowing of bank i

$$Max\ \lambda u(c_1) + E\left((1-\lambda_i)\, u(c_{2,i})\right)$$

$$s.t. \begin{cases} \lambda_i c_1 \leq 1 - \alpha + b_i \\ (1-\lambda_i)\, c_{2,i} \leq r\,(\alpha - b_i) \\ c_{2,i} \leq c_1 \end{cases}$$

Optimum

$$u'(c_1) = rE\left(\frac{\lambda_i}{\lambda} u'(c_{2,i})\right).$$

- λ_i and $c_{2,i}$ comove. Imperfect insurance of patient customers "being in the wrong bank" risk and thus imperfect liquidity insurance.

Third Case: Uncertainty about the distribution of shocks

- Still no aggregate uncertainty on total withdrawals, but uncertainty on the distribution of λ_i.
- Now the interbank market rate $\widetilde{R}$ is stochastic, depends on this distribution

$$Max\ \lambda u(c_1) + E\left((1-\lambda_i)\, u(c_{2,i})\right)$$
$$s.t. \begin{cases} \lambda_i c_1 \leq 1 - \alpha + b_i \\ (1-\lambda_i)\, c_{2,i} \leq r\alpha - \widetilde{R} b_i \\ c_{2,i} \leq c_1 \end{cases}$$

- Optimum

$$u'(c_1) = E\left(\widetilde{R}\frac{\lambda_i}{\lambda} u'(c_{2,i})\right)$$
$$rE\left(u'(c_{2,i})\right) = E\left(\widetilde{R} u'(c_{2,i})\right)$$

- Key insight of the paper: Under distribution risk, there are several equilibrium $\widetilde{R}$ each with different welfare implications.
- Distribution uncertainty adds an additional source of risk, but there is no way to make markets nor contracts more complete. Thus there is a broader set of candidates $\widetilde{R}$ that satisfy the indifference conditions in existing markets.
- A central bank can exploit this larger incompleteness by picking an optimal $\widetilde{R}$. It can commit to lowering the rate in states of high dispersion of λ_i. It must then commit raise it in case of low dispersion.

Comments

1. Restrictions on contracts
2. Central bank's commitment power
3. Compatibility between what the central bank can do and banks cannot do
4. Interbank market tensions and expectations about the economy

Restriction on contracts

- The degree of dispersion of liquidity needs is observable but not contractible: crucial
- More motivation. Examples of soft and hard information (e.g., market rumors vs data from the fed funds market or balance sheets)
- c_1 is not contingent on anything. Mere simplification or less innocuous?

Central bank's commitment power

- Raising the interbank rate if dispersion of liquidity needs is low is ex post inefficient. Requires a commitment device. Otherwise excessive illiquidity ex ante.
- Seems hard to find a way to commit to a policy that is contingent on states that are difficult to describe.

Compatibility between what the central bank can do and banks cannot do

- If the CB can publicly announce and explain a low/high dispersion-contingent policy and commit to it, then it means that dispersion can be inferred form the central bank's policy.
- Thus if one can contract on the central bank policy, one can make contracts more contingent.
- The gap between what the central bank and banks can do in terms of state-contingent actions seems very large.

Interbank market tensions and expectations about the economy

- The paper claims that it provides a rationale for monetary policy response to tensions in the interbank market
- Tensions in the interbank market reveal major shifts in expectations about future growth/inflation and are in the information set of central banks.
- Qualitatively, one thus would expect monetary policy to respond to such tensions as signals about fundamentals.