Liquidity Hoarding and Interbank Market Spreads: The Role of Counterparty Risk

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Conference on “Central Bank Liquidity Tools”
NY Fed, February 19, 2009

The views expressed are solely those of the authors.
Interbank market: Some facts

9th Aug. 07 – 25th Sep. 08

Basis points

Volume (bn EUR)

1.1. 1.3. 1.5. 1.7. 1.9. 1.11. 1.3. 1.5. 1.7. 1.9. 1.11. 1.3.

3m Euribor - 3m Eonia swap

Recourse to deposit facility

Fine tuning (liq. absorbing)
Interbank market: Some facts

- Lehman bankruptcy
- Wash.Mu. seized & sold
- US bailout stalls
- Fortis, Wachovia, HRE, B&B
- Glitnir
- ECB corridor narrows

Graph showing:
- 3m Euribor - 3m Eonia swap
- Recourse to deposit facility
- Fine tuning (liq. absorbing)
Interbank market: Some facts

![Graph showing basis points for 3m US Libor - 3m OI swap and 3m Euribor - 3m Eonia swap from 9th Aug. 07 to 25th Sep. 08.](image-url)

- 3m US Libor - 3m OI swap
- 3m Euribor - 3m Eonia swap

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  - Safe borrowers drop out (adverse selection)
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  - ex ante interventions
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After investment is made, privately-observed shock to illiquid asset risk:

Assume: riskier assets have lower liquidation value, \( l_s > l_r \) isomorphic to \( R_s < R < R_r \) (riskier asset has a higher return) only need type-specific \( R_l \) (opportunity cost of liquidation).
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Banks offer deposit contracts.
Banks allocate deposits between liquid and illiquid assets.

Idiosyncratic liquidity shocks and shocks to illiquid asset’s risk realized.
Banks borrow and lend on an interbank market at an interest rate $r$.
Additionally, they can liquidate some of their illiquid asset holdings and/or keep cash in reserves.
Impatient consumers withdraw deposits.

The return of the illiquid long-term asset realizes.
Interbank loans are repaid.
Patient consumers withdraw their deposits.
Regime I: Full participation of borrowers and lenders

- Interbank interest rate $r$ is given by no arbitrage:

$$\pi_l \pi_p + \pi_h \pi_p = \pi_l \pi_p + \pi_h \pi_p$$

Since $\pi_l \pi_p > 1$, there is a "risk premium! liquidity costly since lending is risky!" In Regime I: risk premium < liquidation premium for safer borrowers no impairment to market functioning
Regime I: Full participation of borrowers and lenders

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(\pi_I p + \pi_h p)(1 + r) = (\pi_I p + \pi_h p) R
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  - full: $1 + r_{FG} = R$; cost: $(1 + r_{FG}) \pi_h L_h$
  - partial: $1 + r_{PG} > R$; cost: $(\hat{p} + r_{PG}) (1 + r_{PG}) \pi_h L_h$

- Asset purchases: CB not exposed to liquidity risk
  - price $P > l_\theta = \ldots$ re-sale, $P$ set only to reflect counterparty risk
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  - cost(partial)$ >$ cost(full) possible as $r_{PG} > r_{FG}$

- **Asset purchases:** CB not exposed to liquidity risk
  - price $P > l_0$ = “fire-sale”, $P$ set only to reflect counterparty risk
Thank you!
Interbank market: Secured vs Unsecured
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