The Cost of Clearing Fragmentation

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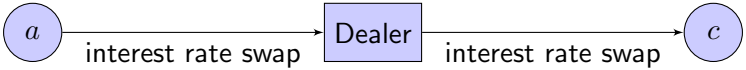
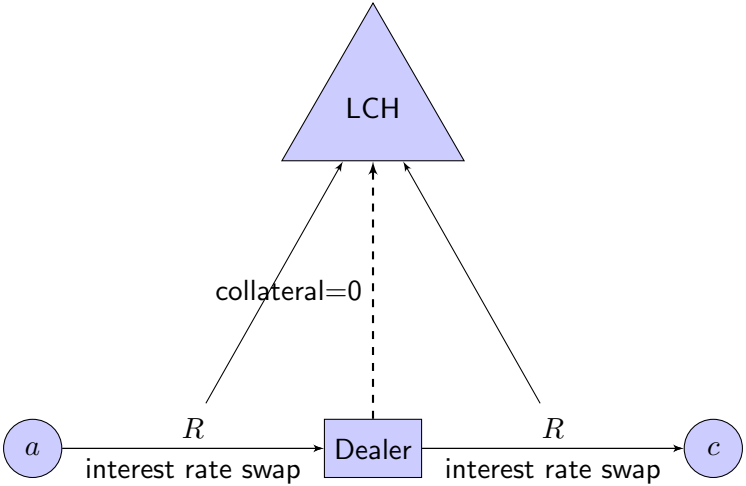
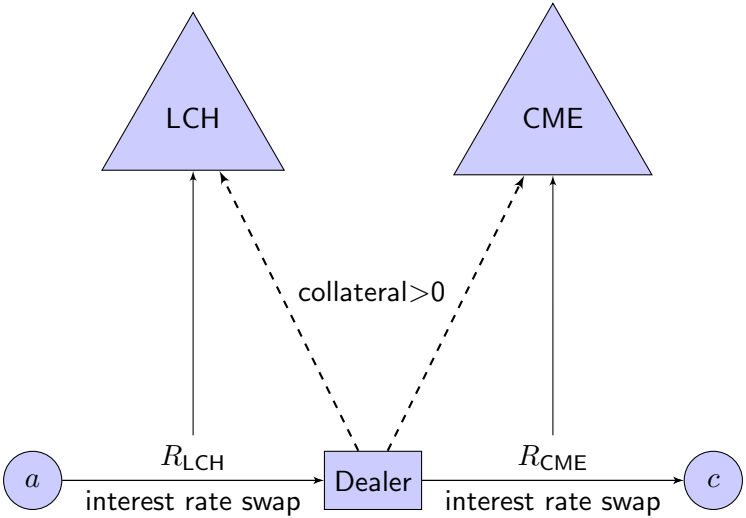
CCP Basis



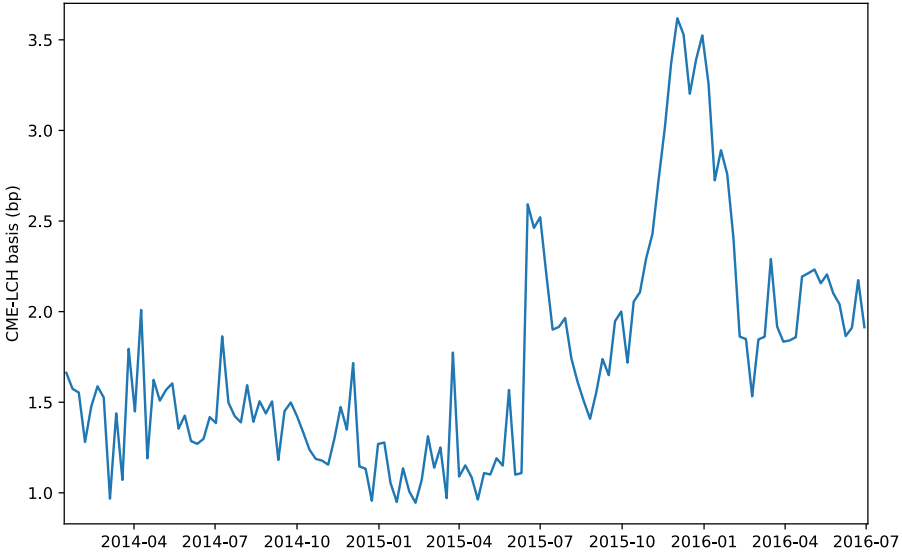
CCP Basis


LCH
collateral=0
a
R
interest rate swap
Dealer
R
interest rate swap
c

CCP Basis


LCH
CME
collateral>0
a
R_{LCH}
interest rate swap
Dealer
R_{CME}
interest rate swap
c

CME-LCH Basis



Model

- Fundamental value: $\mu_t = \mu_{t-1} + \epsilon_t, \qquad \epsilon_t \sim \mathcal{N}(0, \sigma^2)$
- Liquidity traders: exogenous demand, net buyer for CME and net seller for LCH
- Dealer: Competitive, linear collateral requirement
- Arbitrageurs: no collateral requirement

Predictions

- CCP basis increasing in the amount of collateral
- CCP basis decreasing in the number of arbitrageurs
- CCP basis increasing in dealer's credit risk
- CCP basis increasing in dealers's inventory imbalance

Suggestions

- Compelling story for CCP basis
- Nice model
- Address a confounding story
- Static model, or unique predictions from the dynamic model?

Confounding Story: Adverse Selection

Dealers also charge a spread—bid-ask spread—to cover adverse selection cost (Glosten-Milgrom):

- $R_{\text{LCH}} < R_{\text{CME}}$ because R_{LCH} closer to the bid price, R_{CME} closer to the ask price
- May very well be on the same order of magnitude as 1bps-3.5bps.
- Key determinant: order flow imbalance
- Should be irrelevant: Amount of collateral, number of arbitrageurs, dealer's credit risk

Subtracting the Adverse Selection Spread

May subtract the adverse selection spread

- The authors have transaction level data from LCH.
- Include trade direction?
- If so, authors may infer the adverse selection component of the bid-ask spread
- Can subtract it (adverse selection should be the same across CCPs).

Static model, or unique predictions from the dynamic model?

Static model?

- All the 4 predictions seem deliverable by a static model
- Fundamental value: ~~$\mu_t = \mu_{t-1} + \epsilon_t, \quad \epsilon_t \sim \mathcal{N}(0, \sigma^2)$~~ $\mu \sim \mathcal{N}(0, \sigma^2)$
- Adapt the dealer's utility function

Unique predictions from the dynamic model?

- Transaction price p_t still a martingale? Price momentum or mean-reverting?
- Dynamics of the CCP basis?

Conclusion

- Clearing across different CCPs costs redundant collateral posting
- Dealers charge a "spread"—CCP basis—to recover the additional collateral cost
- Evidence consistent with model predictions
- Adverse selection explains a "spread" in the same direction—can be subtracted away first
- Static model or derive unique predictions of the dynamic model