Bank Funding Risk, Reference Rates, and Credit Supply

Cooperman, Duffie, Luck, Wang, and Yang

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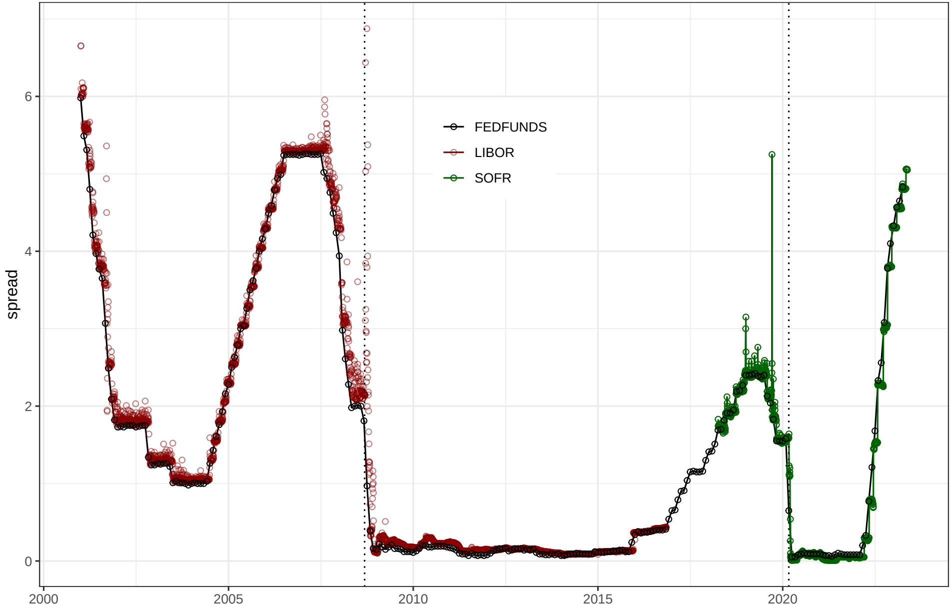
This Paper

Transition from state-contingent (LIBOR) to flat (SOFR) reference rate

- Credit lines rates are set at spread over LIBOR
  - LIBOR (*Interbank Offered Rate*) represents current state of banks funding costs.
- Moving to a rate decoupled from bank costs: SOFR
  - How would bank respond to change in regulation?

- Credit rationing from banks anticipating high costs but unable to raise their "prices"
- Counterfactual analysis suggest that move to a flat rate could lead to 3% welfare loss.

Bank funding costs: SOFR and LIBOR



Background on credit lines pricing

Pricing side

- Large asset commitments for banks
- \$3.5 trillion (Nov. 2019)
- Pricing of lines is

$$r = \textit{reference rate} + \textit{Spread}(\text{firm quality})$$

Cost side

- Mostly rate insensitive funding
  - Deposits (59%) retail and corporate are cheap
  - Wholesale funding (16%) smaller but more expensive and credit sensitive

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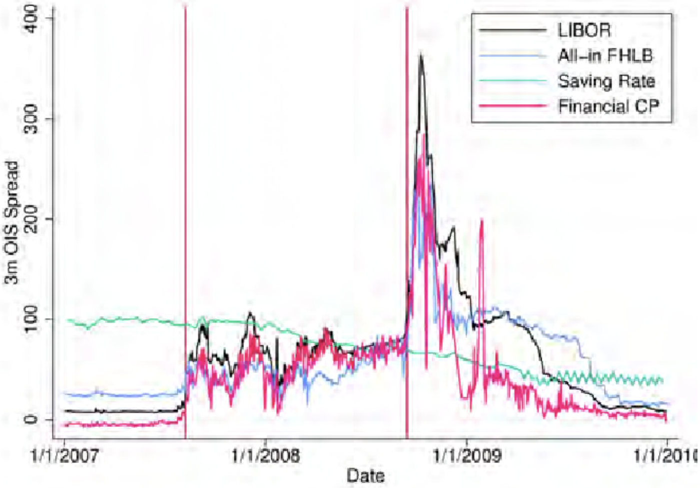

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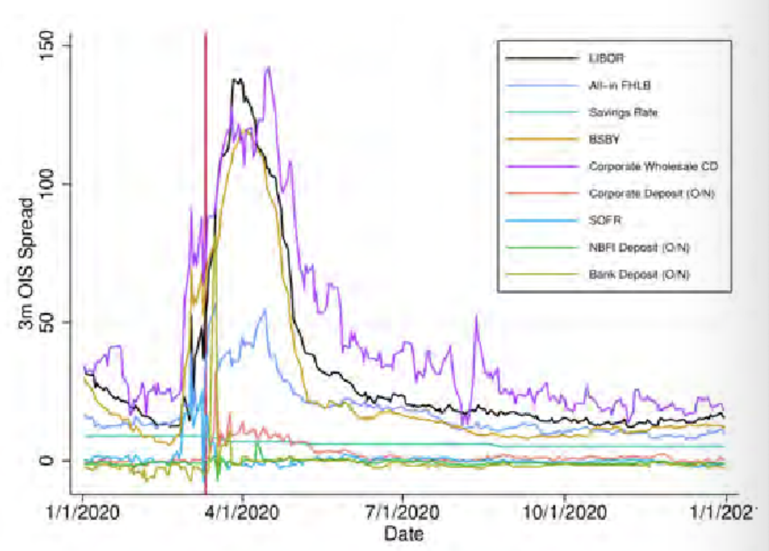


Implications of bank keeping the risk inside

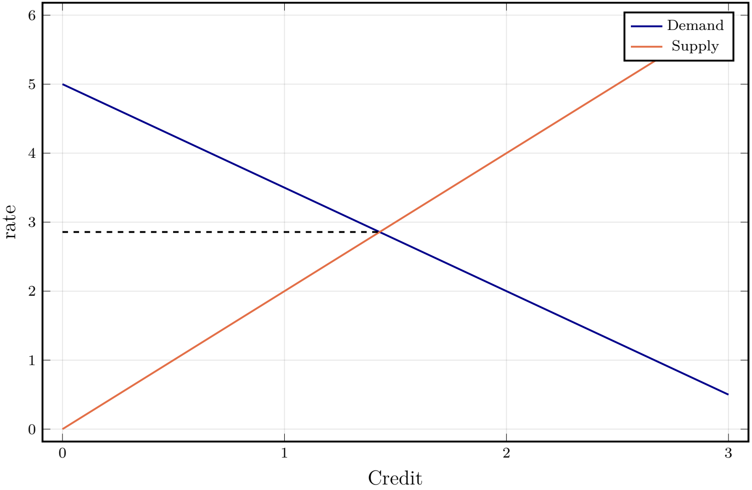
Liquidity transformation

- What is the cost of transitioning from LIBOR to SOFR
  - Banks bear all funding risk
  - Higher volatility in revenues (fixed price but moving marginal costs)
- MM world: nothing happens
  - Banks charge slightly higher spread (level change) to account for risk premium

Debt overhang

- If funding costs spike: banks face debt overhang
- Debt overhang is acute because credit lines drawdowns coincide with high funding costs
  - Positive covariance between quantity of debt and cost
- State-contingent priced credit lines mitigate this problem
  - higher price means more profit from loans but also reduced credit demand

Why is the risk to bank so high?



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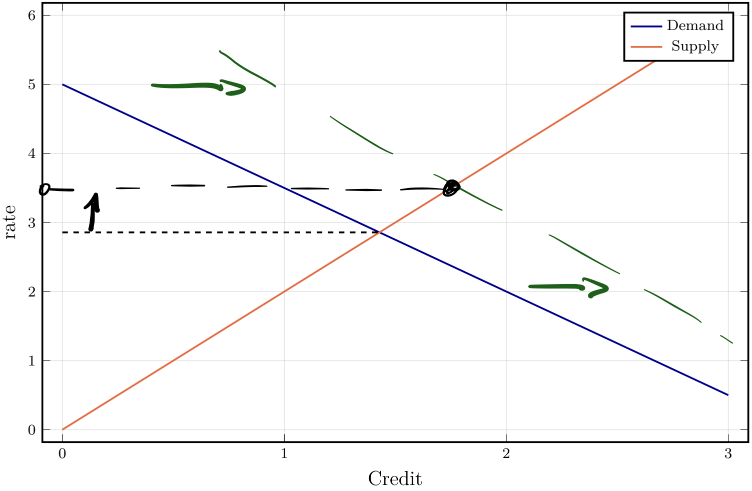

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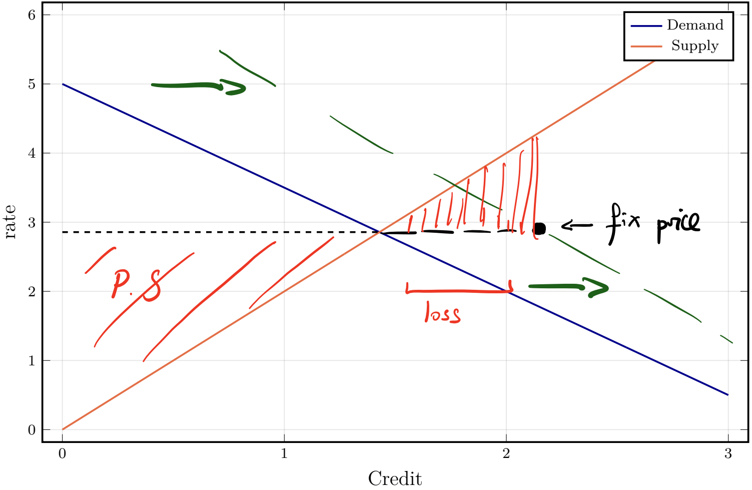

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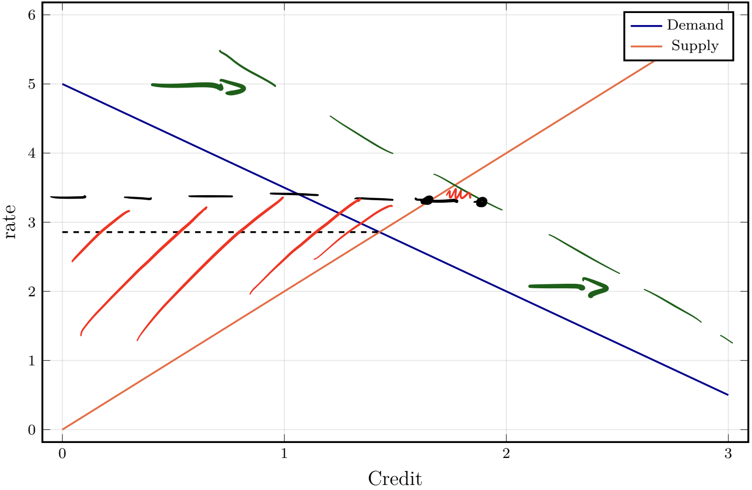

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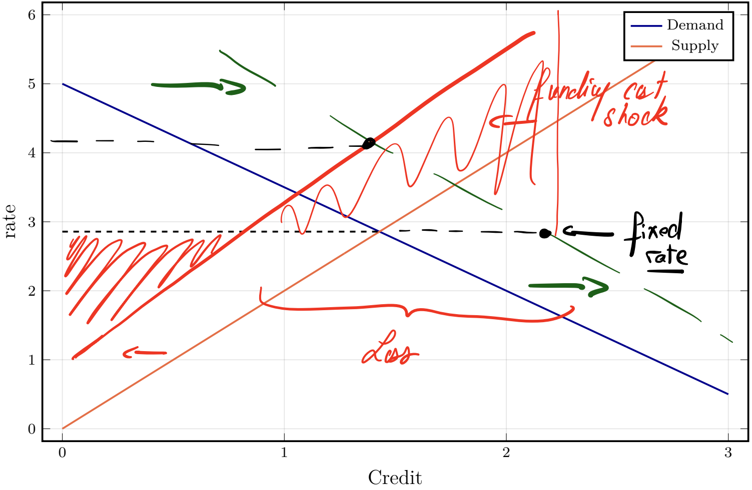

What the optimal reference rate?

Fixed reference rate

- Bad because credit demand spikes when cost of making loans is high
  - Incentives to reduce credit supply ex-ante

Libor reference rate

- Mitigates increased in demand by increasing the price
- Match funding costs to the price of the loan

What the optimal reference rate?

Is Libor-type rate optimal?

- Debt overhang problem due to high covariance between costs and demand

$$(1 - \varphi)Q(L)S$$

- If Q does not covary with S: tie price to quantity demanded
- What drives amount of credit re-deposited φ?
  - Covid: large amount were redeposited ($\varphi \simeq 90\%$); GFC little.
  - What is the actual marginal costs of bank funding?
- Could bank set a supply schedule where rates increase with quantity drawn?

What is the actual marginal cost for banks

Does LIBOR truly represent the marginal cost of funding?

- Some evidence on the spike in wholesale funding of banks
- Small fraction of their overall funding
- Central bank opened multiple sources of funding facilities throughout the crises
  - What prevent banks from borrowing from these facilities

Small Banks / Big Banks

- Large banks have easier access to funding
- At the same time, they are more likely to suffer from high debt overhang
- Cross-section of funding costs and credit drawn informs us about who would actually ration credit under SOFR regime

Banks should respond to change in regulation

- Banks adjust their risk management and funding in response to a switch to SOFR (Lucas critique)
- Instead of sharing the risk with the borrower, they will adjust their own borrowing behavior

The corporate side

What about the costs on the firm side?

- Firms like fixed rate
- Firms do not want the uncertainty of bank financing added in their risk profile
- Moving from variable to fixed rate might liberate corporations from their own agency frictions: less uncertainty, more investment.

Difference is concentrated in critical time?

- What are these lines used for?
- Redepositing most of the lines suggest need for liquidity
- Chodorow-Reich et al. different behavior of small and large firms with credit lines

Final Thoughts

Interesting Paper! Go read it.

Take away

- Counterfactuals of SOFR regime in bank distress times.
- Welfare costs due to liquidity drawdowns when bank costs are high