Bank Funding Risk, Reference Rates, and Credit Supply

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Summary

- The paper studies how loan reference rates affect the supply of credit lines
  - How will the transition from LIBOR to SOFR affect credit line provision?
- **Main finding:** Transition to SOFR will adversely affect the total supply of credit lines
- **Economic mechanism:**
  - Bank shareholders face debt overhang friction in funding credit lines
  - Transition to SOFR will worsen this debt overhang
  - Debt overhang priced in, making credit lines more expensive

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  - Positive correlation between firms' propensity to draw down their credit lines and banks' cost of funding generates debt overhang

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- SOFR's effect on debt overhang
    - Suppose banks can link credit lines to LIBOR or SOFR
    - LIBOR is credit sensitive — reflects the funding cost of banks in the wholesale funding market and goes up in periods of stress
    - SOFR is risk free and does not increase as much in periods of stress
    - Firms with credit lines linked to SOFR will not see a huge increase in their cost of drawing down the line $\rightarrow$ credit line draw downs will be relatively higher $\rightarrow$ higher covariance between expected funding cost and drawdowns $\rightarrow$ debt overhang increases

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- Higher debt overhang priced into credit line terms

Why is this paper important?

1. **Studies a landmark change in financial markets**
   - Almost all floating-rate financial contracts (more than 200 trillion USD) referenced to LIBOR — transition to SOFR is a fundamental change in financial markets
   - Limited understanding of how this transition will affect banks and credit provision

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2. **Brings together the most important questions in financial intermediation**
   - Banks' exposure to quantity risk as well as price risk in credit lines (Ho and Saunders, 1983; Acharya and Mora, 2014)
   - Coexistence of bank deposit taking and loan commitments (Kashyap, Rajan, and Stein, 2002)
   - Hedging liquidity and interest rate risk (Gatev and Strahan, 2006; Drechsler, Savov, and Schnabl, 2017)
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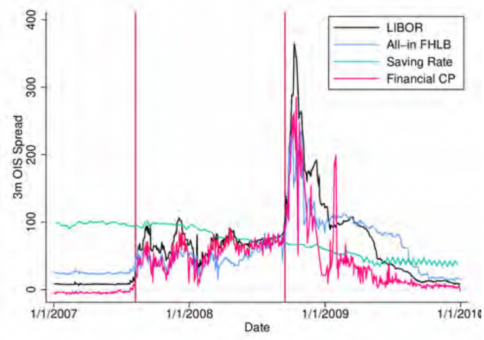
3. **Sheds light on banks' funding of credit line drawdowns** using new data on bank funding contracts

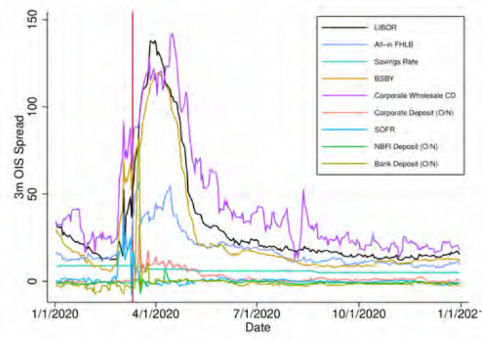
How large is the debt overhang in the data?

- Depends on the extent to which banks' expected funding costs go up to fund drawn credit lines in periods of stress
- Which types of financing become more expensive in periods of stress?
- How important are those financing sources for funding credit lines?

How large is the debt overhang in the data?

- Which types of financing become more expensive in periods of stress?
  - Unsecured wholesale funding > secured wholesale funding > transaction deposits





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- How important are credit sensitive financing sources for funding credit lines?
  - Deposits finance 60% of assets and wholesale funding about 16% of assets
  - 70% of wholesale funding is in the form of fixed-rate long term debt (not credit sensitive)
  - Federal Home Loan Bank advances second most important source

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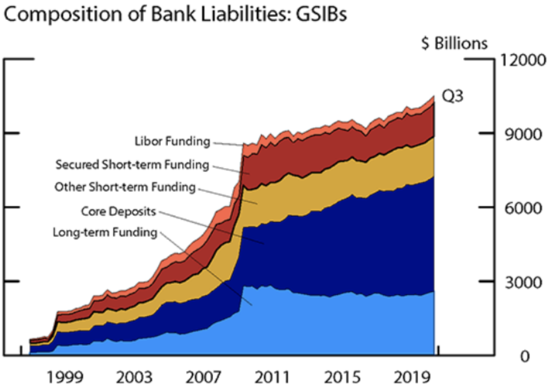

Source: Bowman, Scotti, and Vojtech (2020)

How would transition to SOFR affect banks' funding cost?

- Federal Home Loan Bank advances are an important source of wholesale funding for regional banks

Federal Home Loan Bank
NEW YORK

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Adjustable-Rate Credit (ARC) Advance

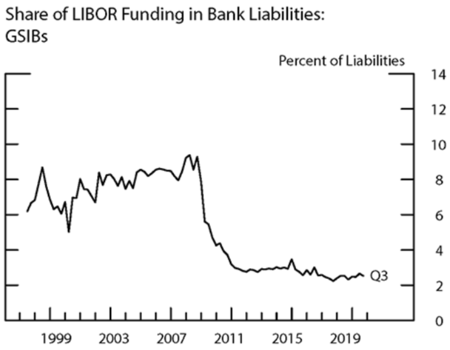
Match the interest rate characteristics of your adjustable-rate loan portfolio

Advantages:

- More closely match the attributes of adjustable-rate assets with financing tied to floating rate advance funding
- Tailor to meet specific financing needs with a wide range of maturities, up to 30 years
- Link to the Secured Overnight Financing Rate (SOFR) index with the option to use Simple Averaging or Compounding interest accrual calculations
- Limit exposure to rising and falling interest rates by using embedded options (caps/floors)

Choice of debt structure

- In the model, banks finance credit line drawdowns with unsecured funding
- Anticipating the debt overhang problem, would banks optimally shift their debt structure?
- Rely more on secured financing tied to SOFR?



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Other ways to reduce debt overhang

- Can the use of SOFR-linked derivatives offset or reduce the covariance between credit-sensitive funding cost and credit line drawdowns in times of stress?
- Issue floating rate notes linked to SOFR?
- Have more liquid assets on the balance sheet? Role of excess reserves?

Other considerations

- Role of capital regulation
- Does the source of funding stress shock matter? Originated in the banking sector or elsewhere?
- Is there a pecking order in banks' use of different funding sources to finance credit line drawdowns?

Conclusion

- Important paper — can shape the policy debate about the addition of a credit sensitivity-adjusted spread to SOFR

- SOFR differs from LIBOR along many other dimensions. The discussion in the paper has kicked off a very important research agenda