Banking Regulation:
The Risk of Migration to Shadow Banking

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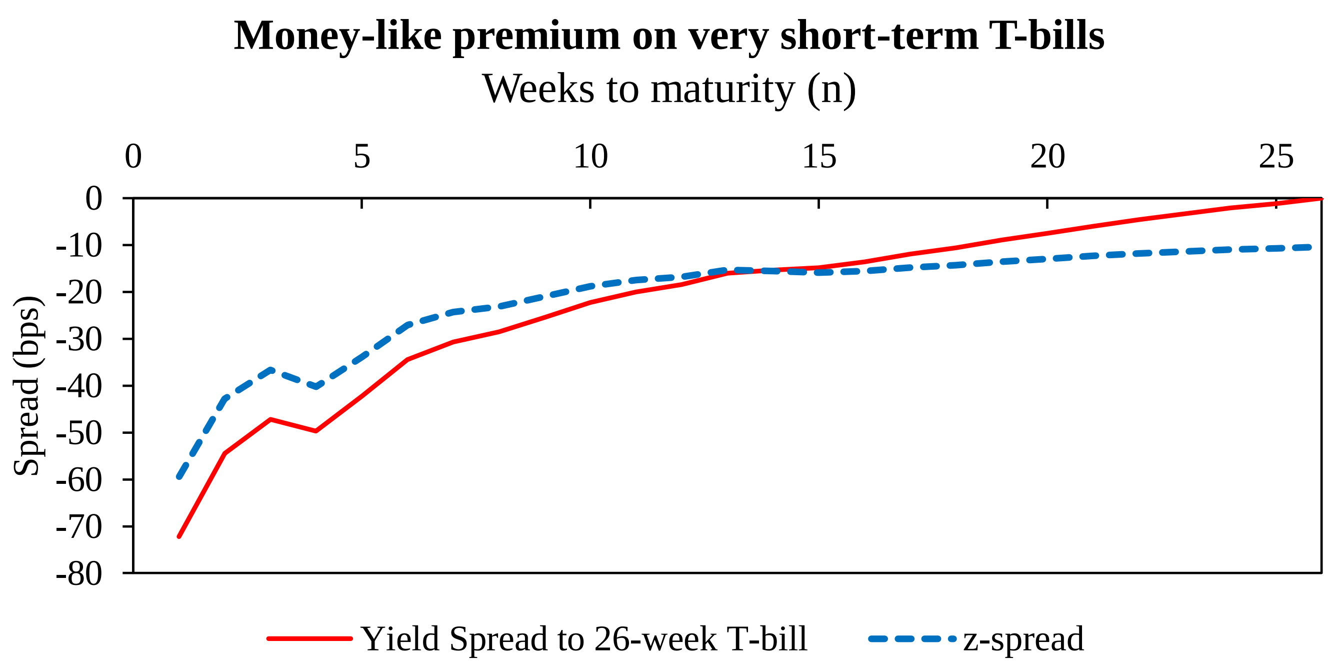
Micro- vs. Macro-prudential regulation

- **Micro-prudential**: Regulated banks should have enough capital to ensure that taxpayer bailouts are unlikely
  - **Market failure is <u>moral hazard</u>, aka "Too big to fail"**
    - Firms take on excessive risk/leverage to extract govt subsidies
    - Little need to regulate intermediaries who won't be bailed out

- **Macro-prudential**: Limit excessive contractions in credit when many financial intermediaries hit with common shock
  - **Market failures are <u>fire-sale</u> and <u>credit-crunch externalities</u>, aka "Too important to stop lending"**
    - Because they don't internalize the full threat they pose to financial stability, intermediaries' decisions make the financial system overly vulnerable to crises even without moral hazard
    - Worry about excessive credit contractions from traditional banks, shadow banks, non-banks, and markets alike

The "underlying problem" in banking

- There is a special demand for financial claims that are safe, short-term, and liquid—i.e., that are "money-like"
  - Results in meaningful money-like premium: offer interest rates that seem "too low" from a textbook risk-return perspective
  - Especially strong for overnight or 1-week claims



The "underlying problem" in banking

- As a result, banks have a strong market incentives to manufacture money-like claims via "**maturity transformation**"
  - Using **(long-term / illiquid / risky) assets** to back **(short-term + liquid + safe) liabilities**

- But maturity transformation can pose threats to macro-financial stability that are not fully internalized
  - **Example: Fire-sale externality**

    Heavy reliance short-term, runny funding
    → Forced asset liquidations following a bad economic shock
    → Fire sales prices threaten solvency of other intermediaries
    → Contraction in flow of credit to the economy
    → Exacerbates bad initial shock to economy

The “underlying problem” in banking

- Failure to internalize financial stability costs means that, from social point of view, banks may:
  - Issue “too much” short-term, runny debt
  - Issue “too little” loss-absorbing equity
  - “Too slow” to recapitalize following losses
- In theory, imposing appropriately strict liquidity and capital regulations on **all banking intermediaries**—which force them to fully internalize threats they pose to macro-financial stability—would correct these market failures
- Post-crisis regulation shaped by macro-prudential view:
  - New Basel III bank liquidity regulations (LCR, NFSR)
  - Heightened bank capital regulation under Basel III plus forward looking stress-testing (CCAR)
  - Resolution of large intermediaries (debt-equity conversions, OLA)

A functional view of “banking”

- **Banking = Credit intermediation + maturity transformation**
- **Traditional banking**
  - Banking carried out by **highly-regulated institutions** that **receive extensive public sector support** (deposit insurance, LOLR)
- **Shadow banking**
  - Banking carried out by **chains of transactions** involving multiple **market-based intermediaries**, who are **lightly regulated** and receive **far less public support**
    - **Example:** A hedge fund buys a risky loan using its own equity and an overnight repo from a broker-dealer. Broker-dealer uses the same collateral to borrow from a MMF in the tri-party repo market
    - **Note**: some use “shadow banking” more broadly to refer to all credit intermediation that takes place outside of traditional banks

Limitations of financial regulation

1. **Heightened regulation leads activity to migrate from "regulated banks" toward "shadow banking "** or other more lightly-regulated non-bank intermediaries
   - Potential for migration reduces ability of regulation to correct underlying market failures and safeguard financial stability
   - Dynamic:
     - **Ideal:** financial regulation should be **activity-based**: maturity transformation should be regulated similarly whether carried out by a commercial bank, broker-dealer, mutual fund, etc.
     - **Practice**: regulate activities by certain institution types
     - **Regulatory whack-a-mole**: regulatory response → migration → dilution of regulations → adverse effects → regulatory response

2. **Regulation inefficiently distorts behavior of regulated intermediaries in unintended ways**
   - Discourages desirable activities along w/ undesirable ones
   - **Example**: SLR seems to be discouraging matched-book UST repo

Crowding-out as a complement to regulation

- **Crowding out**: *government should issue more short-term debt than it otherwise would*
  - By issuing ST debt, government depresses money-like premium on ST debt, reducing incentive for intermediaries to engage in excessive maturity transformation in the first place
  - **“Gets into all the cracks where regulation can’t”:** because it depresses the equilibrium money premium, reduces excessive maturity transformation by regulated banks and unregulated shadow banks alike
- But, has drawbacks from **fiscal risk** standpoint:
  - Issuing ST debt makes government interest bill more volatile
  - Big shocks to interest bill may force govt. to raise taxes or cut back on expenditures, so unwise to be overly reliant on ST debt
- Rely more on crowding-out, less on regulation, when:
  1. Regulation imposes greater unintended costs on the economy
  2. Maturity transformation activity can more readily migrate from regulated banking sector to the less-regulated shadow banking sector

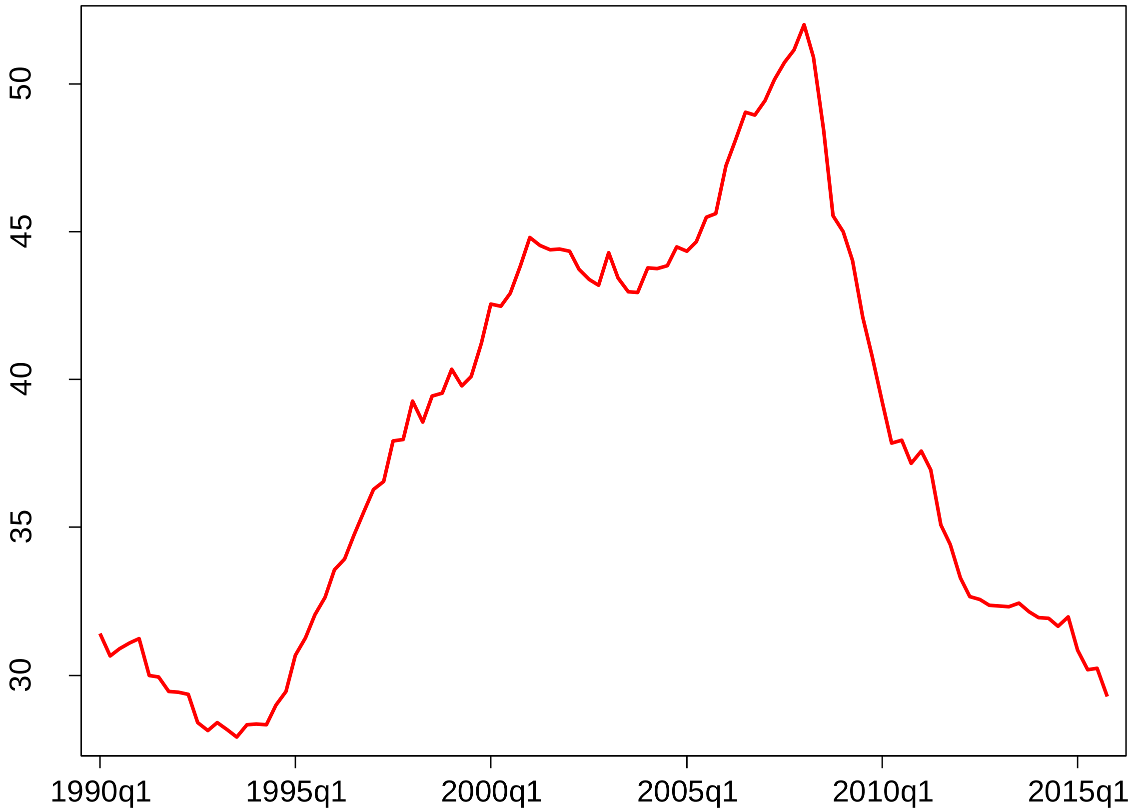
Crowding-out as a complement to regulation

- Greenwood, Hanson, and Stein (2015, 2016) make the case for "crowding out" as a complement to regulation
- Provide evidence that:
  1. There is a special demand for money-like claims → Money-like premium that reduces equilibrium rate of interest on these claims
  2. Demand slopes downward: When govt. issues more ST debt, reduces money-like premium
  3. ST govt. debt and ST financial debt are substitutes: When govt. issues more ST, financials issue less ST and more LT debt
- How to minimize fiscal risk due to more ST govt. debt?
  - To reduce volatility of interest bill, use a "barbell" strategy: swap intermediate term bonds for a combination of very ST and very LT bonds
  - Involve Fed: Since Fed faces no "auction risk," it has a comparative advantage over Treasury in issuing more overnight claims

Shadow banking today

- Today shadow banking system is at its nadir

Shadow banking claims as % of private money-like claims



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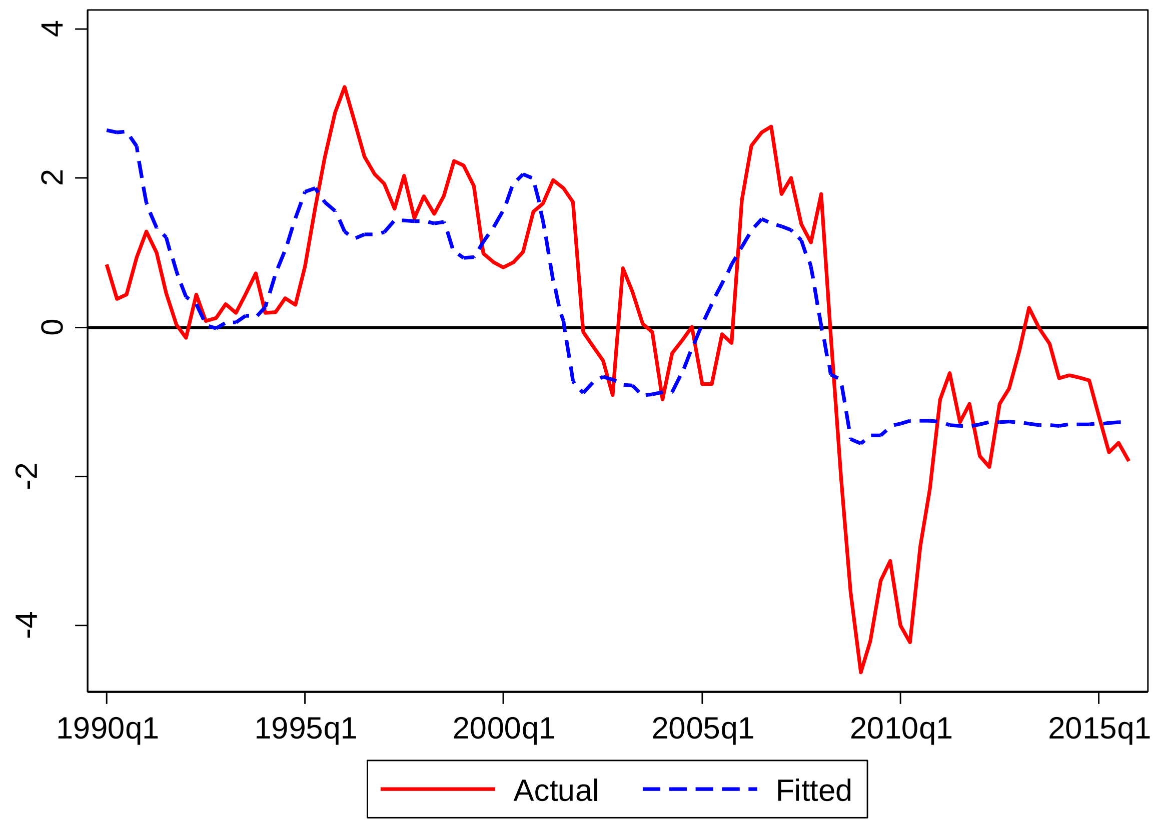
  - **Low rate environment:** What will happen when rates rise?

Shadow banking going forward

- In past, deposits have flowed out of regulated banks and into MMFs (shadow banks) when short-term rates are high or rising

$$\Delta_4(SHADOW_t / TOTAL_t) = \underset{(t\ =\ -2.53)}{-1.85} + \underset{(t\ =\ 4.87)}{1.18} \cdot (r_t - r_{t-4}) + \underset{(t\ =\ 3.33)}{0.63} \cdot r_{t-4}, \quad R^2 = 0.54.$$



Shadow banking going forward

- In past, deposits have flowed out of regulated banks and into MMFs (shadow banks) when short-term rates are high or rising
  - As rate rise, banks exercise market power over unsophisticated savers, leading rates on savings and small time deposits to lag well behind the Fed funds rate (Drechsler, Savov, Schnabl, 2016)
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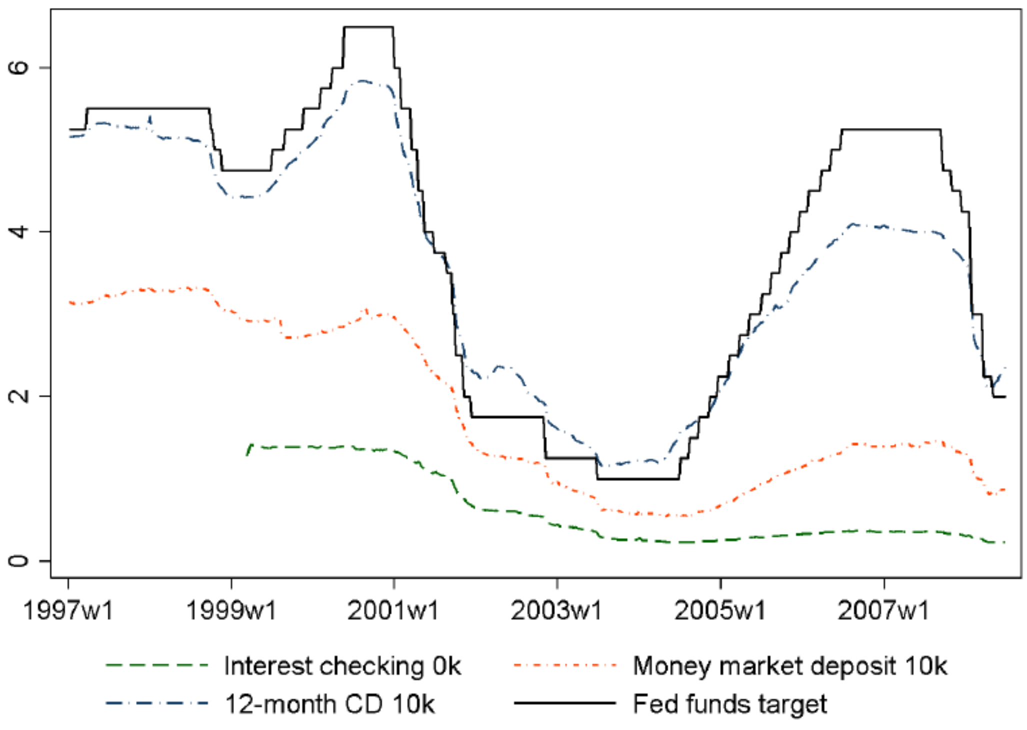

Conclusion

- Going forward, worry about migration to a reconstituted shadow banking system as short-term policy rates rise
  - Expanding supply of ST govt debt should lower threat of migration
- However, other instances of regulatory-induced migration may already be afoot
  - Large banks have been exiting small biz lending since 2008
  - Anecdotally, because offers a poor return on capital giving heightened capital standards: CCAR assumes high loss rates on small biz
  - Increasingly being taken up by alternative, non-bank lenders who aren’t subject to prudential regulation
  - But what happens to the flow of small biz credit if these alternative lenders are hit by a common shock and are slow to recapitalize?
- While I broadly support post-crisis regulatory reforms, thoughts like these give me pause when thinking about proposals to, say, raise bank capital requirements to 30%