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 *moral hazard*, 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 *fire-sale* and *credit-crunch externalities*, 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

![Diagram showing the money-like premium on very short-term T-bills over weeks to maturity.](image-url)
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

• Worry about migration to something on its last legs?

• Depend on:
  ◦ Regulation:
    • Basel III liquidity (LCR, NFSR): Wholesale funding “taxed”
    • Money market fund reforms (take effect in October)
    ◦ Floating NA V and redemption fees/gates for institutional prime
    ◦ Assets down $575B (~60% decline) from announcement in mid-2014
  ◦ Investor beliefs:
    ◦ Low rate environment: What will happen when rates rise?
    ◦ investor beliefs fade?
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

\[
\Delta_4 \left( \frac{SHADOW_t}{TOTAL_t} \right) = -1.85 \cdot (t = -2.53) + 1.18 \cdot (r_t - r_{t-4}) \cdot (t = 4.87) + 0.63 \cdot r_{t-4}, \quad R^2 = 0.54.
\]

![Graph showing 4-quarter change in Shadow / Private (%)](image)
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)
  * Institutional savers substitute to large time deposits and MMFs
    * To the extent this is recycled back to regulated banks in the form of wholesale funding, should now be "taxed" by LCR and NFSR
    * But a chunk has also gone to fund "pure" shadow banking
  * How will this play out in the next tightening cycle?
    * Will institutional savers revert to prime MMFs as they begin to offer a larger yield spread over deposits and government MMFs?
    * Expanding the supply of ST government debt reduces the chance!
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%