FDIC
BANK RESEARCH CONFERENCE

Discussion by
Anjan Thakor
Olin School of Business
Washington University in St. Louis

THE BIG PICTURE

Three interesting papers. All deal with the depository aspects of banking, theoretically and empirically.

And… all make the important point that bank capital is a key mediating variable in the determination of deposit flows to changing market conditions.

These papers collectively inform us that:

- Demandable deposits may be optimal even without risk sharing/consumption smoothing needs.
- Higher capital diminishes run risk in this setting.
- The deposit franchise is valuable to banks (primarily due to either rate stickiness or value of bank's depository services to depositors exceeding bank's marginal cost of providing the services).
- Increasing benchmark/market interest rates will diminish value of franchise.
- Banks react more aggressively to competitors for deposits via interest rate, .

- These competitive dynamics primarily benefit high-capital banks in terms of attracting deposits.

OVERALL MESSAGE

* Deposit contracting can be expected to be pervasive in many circumstances (not just for consumption smoothing) and is a source of rents for banks…

* But…it also exposes banks to liquidity risk which is higher when market rates are higher. Banks proactively manage this liquidity risk through interest rate competition, especially during crises…
  And…the biggest beneficiaries of this rate competition and deposit franchise rents are high-capital banks.

➡ Collectively, these papers highlight different channels through which market forces impinge on bank deposit dynamics …and novel ways in which bank capital enhances bank value.

➡ Consistent with Mehran-Thakor (“Bank Capital and Value in Cross-Section,” RFS 2011) which finds a positive cross-sectional relationship between bank capital and value, i.e., theoretically and empirically, banks with higher capital have higher equity and higher total values (debunks popular claim that increasing capital requirements – from current levels--will hurt bank equity values).

DEMANDABLE DEBT WITHOUT LIQUIDITY INSURANCE

By Elena Carletti, Agnes Leonello and Robert Marquez

Situation:

In very stylized settings — depositor risk aversion, consumption preference shocks, banks structured as zero-equity mutuals, etc. — it is shown that demandable debt is optimal for providing depositors consumption smoothing…

And this makes banks runs-prone (D-D, 1983).

Research Question (RQ):

- Do we really need all of these special features for demand deposits to emerge as a banking contract?

Key Result/Answer:

- (1) No. The demand deposit contract is optimal in a broader set of circumstances — even with risk neutrality.

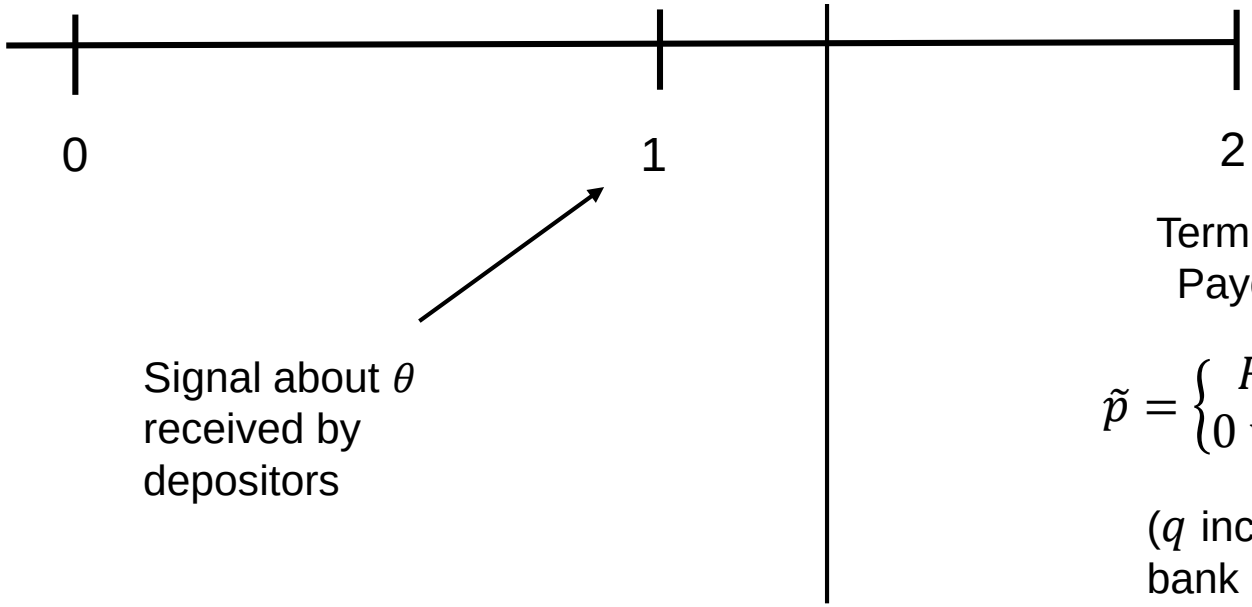
The optimal deposit contract allows for early deposit withdrawal (before the asset matures) even though depositors have no early consumption preference but are motivated by a sign of decline in fundamentals.

Further, even though the demand deposit contract creates the risk of bank runs, the bank can reduce this risk by having more capital.

Comments

- Nice paper. Simple model, well-articulated RQ. I like the main results.
- One thing the paper could do a better job of is clearly summarizing the intuition in the Intro for the optimality of the interim demandable nature of deposits.

Here is what I believe is going on:



- When depositors get a bad signal about fundamentals (θ), their claim on $\tilde{p}$ is (very) risky. Since depositors' claim is concave in terminal payoff and bank's claim is convex, optimal arrangement is for bank to liquidate asset prematurely and pay off depositors (even when L< 1 per $ invested). Note that the more capital the bank has, the less of the asset needs liquidation that way.

As long as there's enough to fully pay off depositors, the arrangement leads depositors to demand a smaller risk premium on repayment, i.e., it reduces what bank has to repay at t=2 in case depositors receive a good signal about θ and view their claim as (almost) riskless at t=2 – avoids dissipative asset liquidation at t=1.

Other Comments

- Should cite and discuss Chari and Jagannathan (JF, 1988) who also model fundamental bank runs with demand deposits and risk neutral depositors (although they don't endogenize demand deposit contract)
- Should cite Jacklin's (1987) work — he shows that using the D-D

preferences, one can get the same welfare and risk sharing with dividend-paying equity, but without bank runs.

What would Jacklin say about this model?

- The notion of protecting depositors from the bank's (idiosyncratic risk) and imposing this risk on bank shareholders is also consistent with the Merton & R. Thakor (JFI, 2019) theory that bank depositors are **customer-financiers** who should be insulated from bank risk that should be borne by **pure financiers** (shareholders).
- I really like the role of capital in the model, but the paper needs a richer discussion of policy implications. **What should regulators take away from this paper?**

DEPOSIT MARKET COMPETITION DURING THE GREAT FINANCIAL CRISIS

By Jung-Hyun Ahn and Michael Brei

Motivation

Deposit flows are important to banks and outflows can cause liquidity risk. So we should understand what drives the dynamics of deposit flows and how banks attempt to influence these dynamics.

Research Questions

- During the 2007-2009 financial crisis, how did banks react to changes in competitors' deposit rates to arrest their own deposit outflows?
- What impact did bank capital have on the effectiveness of these competitive reactions?

Key Results of Empirical Analysis

Using 2004-2012 data, the paper finds:

1. Banks reacted more strongly to changes in competitors' deposit rates during the 2007-2009 financial crisis than during normal times.
   → This behavior persisted even when deposit inflows began to increase.
2. This aggressive reactive behavior not just "gambling for resurrection" — was even practiced by well-capitalized banks.
3. But after Lehman collapse, the increased-deposit-rates strategy primarily benefited high-capital banks.

Comments

- Paper is very interesting. It is carefully done. I like the fact that the authors control for time-varying factors like lending opportunities and liquidity needs.

Controlling for lending opportunities is especially important since…

> Donaldson, Piacentino, Thakor (JFE, 2018) show theoretically in a funding-liquidity-creation model of banking that bank deposits are created by the bank's lending process ("fake receipts")… In fact, my working paper with Edison Yu shows that well over 90% of US bank deposits are created this way ⇒ < 10% accounted for by fiat money deposits. i.e. most deposits are created by loans.

- I like the result that the high-capital banks were the primary beneficiaries of higher deposit rates adopted in response to competitive moves.
- However, there should be some more discussion of the **theoretical underpinnings** of these empirical findings.
- One way to think about is that risk tends to be underpriced during good times and overpriced during bad times (see Gennaioli, Shleifer and Vishny (AER, 2015) and Thakor (AER, 2015; JFI, 2016) for theories) …

…The empirical evidence in Benmelech, Kumar and Rajan's (2020, WP) indicates that spreads between unsecured and secured debt and between high-risk and low-risk debt are quite small during good times and widen during crises.

➡ Given higher risk premia, banks have to pay depositors more during crises (even insured deposits are not 100% insured), so not reacting to competitors' rate increases is not a viable strategy.

- Also makes theoretical sense that the high-capital banks are the main beneficiaries… higher capital means lower risk for depositors and thus higher expected return for any deposit rate.

Also consistent with evidence in Perignon, Thesmar and Vuillemey (JF, 2018) that during the financial crisis there was no overall liquidity freeze for banks but rather a shifting of deposits from riskier, lower-capital banks to safer, higher-capital banks.

- I would also like to see more discussion of the regulatory policy implications of this.

  What should regulators take away from this?

- One possible message: Most recent crises have been insolvency risk – not liquidity risk – crises ⇒ focus on increasing bank capital if you want banks to be less susceptible to deposit outflows (i.e., liquidity risk) during crises.

BANKING ON UNINSURED DEPOSITS

By Itamar Dreschler, Alexi Savov, Philip Schnabl and Oliver Wang

Situation:
Recently we saw how an increase in market/benchmark interest rates destabilized so many banks. We do not have good theories of why the level of interest rates interact with financial stability.

Research Question (RQ):
Why did this destabilization occur?

Key Result/Answer:

- Paper develops a theoretical model of a bank that earns deposit rents (creating a valuable deposit franchise) that vary with the level of market interest rates

- Banks' deposit franchise value results from paying a deposit interest rate < market rates (think of valuable liquidity and other depository services being provided by the bank, as in Merton & R. Thakor (JFI, 2019)).

  …But when market rates go up, gap between market rates and deposit rates becomes too big, causing deposits to flow out (think of what happened in 1980's with the rise of money-market mutual funds that eventually caused Reg Q to be dismantled) ⇒ Bank's deposit rents fall.
- Higher interest rates also means… bank's (long-maturity, fixed rate) asset values fall.
- This now pushes bank to shorten asset duration to reduce impact of higher market rates.

  …But if market rates fall, it hurts bank's equity value (think of a bank making an ARM and then rates fall)

➡ Dilemma: difficult to hedge both interest rate and liquidity risks.

How to resolve this dilemma?

- Paper considers a variety of options, but the one I want to focus on is the role of capital…

  A large enough capital buffer stems deposit outflows when rates increase and thus allows the bank to set asset duration to hedge its interest rate risk.

- Paper solves for optimal capital requirement and finds that it is increasing in interest rates.

Comments

- Very interesting analysis of a well-posed and motivated RQ.

- One issue with the paper is that the withdrawal decision of the depositors is exogenously specified and not microfounded… while it is plausible, it would be illuminating to fully endogenize depositor behavior from first principles and incorporate this in the bank's optimal deposit rate determination.
- Why is there a need for a capital requirement? Why doesn't the bank's private optimum include capital? Is there a friction that drives a wedge between the social and private optima?
- It would be good if the paper could flesh out more its analysis of capital as a risk management device and discuss more fully the regulatory policy implications of this.
  * Would rising interest rates destabilize banks more or less if they had higher capital?

* How do the monetary policy implications of the analysis (interest rate cut can expose banks to insolvency risk if they are hedging liquidity risk by shortening asset duration – in the extreme case, it can destroy the deposit franchise) vary depending on optimally - chosen bank capital?

* How should monetary policy and capital requirements interact?