

Discussion of
**Banks, Liquidity Management, and
Monetary Policy**

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Objectives

1. To develop a model of how monetary policy works through and interacts with the banking system.
 - have an explicit role for the financial system/banks
2. Use the model to interpret stylized facts about the financial crisis and the policies undertaken by central banks
 - why banks have had large increases in reserves holdings without a correspondingly large increase in lending

Model

Agents:

- Banks: have wealth (bank equity), derive power utility from dividend payouts
- Depositors : lend to banks via demand deposits
 - no other role in the model
- Central bank

Time: each day has two periods

- beginning of the day: a “lending stage”
- end of the day: a “balancing stage”

Model

At the *beginning* of the day banks decide how much to:

- borrow from depositors
- invest in loans: high return
- invest in “reserves”: low return
 - to satisfy a reserves requirement equal: a fraction ρ of deposits
 - reserves requirement is imposed at the *end* of the day

At the *end* of the day:

- Banks are hit by exogenous deposit withdrawal shocks
- reserves depleted to redeem deposits
- if reserves requirement is violated \rightarrow must borrow shortfall from central bank
 - there is no interbank market for borrowing reserves
 - central bank levies a high penalty rate for borrowing reserves shortfall
 - also penalizes excess reserves holdings

Model

Banks are also subject to regulatory requirements:

- Capital requirement (at the beginning of day)
 - $D/E < k$
- Liquidity reserves requirement (at the beginning of day)
 - why does the model need this?

Banks problem is a portfolio choice problem (homogenous in wealth/equity)

- expected penalty is a function of the weights in deposits and reserves

Main tradeoff

Investing another dollar in loans:

- earns high return
- *but* increases the reserves shortfall incurred for a given deposit shock
- optimal choice determines the supply of loans
- note: capital requirement binds in the numerical analysis
 - keeps banks from borrowing more deposits to buy reserves to increase reserves ratio
 - in practice reserves have 0 risk weight so wouldn't violate capital requirements

Central bank can change the supply of loans by altering this tradeoff

- the return on loans net of the expected reserves shortfall penalty

Clarification/Questions

- What does the central bank do in the model to manage monetary policy?
 - vary the ex-post penalty rate? the reserves requirement?
 - change the ex-ante cost of holding reserves?
 - not clear in the paper right now
- How does this map to what we see in practice?
 - e.g., changes in the nominal interest rate?

Comments

Model is driven by some strong assumptions:

- 1 Banks cannot share risk of (idiosyncratic) deposit shocks
 - banks have no default risk and there is no adverse selection in the model, so why not?
 - in practice there is a very large, active interbank lending market for such purposes
 - Fed Funds and London interbank markets
 - market for overnight secured loans
 - note: there is no systemic risk in the model (deposits remain in the banking system)

Comments

- ② Central imposes a high penalty for banks for lending reserves
 - there is no agency problem, so why do this?
 - it is welfare-decreasing
 - runs counter to the spirit of central banks' recent interventions as lender of last resort
 - indeed, lender of last resort theory exactly says that central bank should alleviate such interbank freezes
 - the model reverses this: central bank affects ex-ante outcomes by threatening not to (fully) perform this function

Comments

- ③ Exogenous deposit withdrawals
 - what drives these?
 - Acharya and Mora (2013) report smaller dispersion in deposit growth
 - $(-.006, 0.028)$ for 25%-75% of growth for 1990Q1-2009Q4

- ④ No equity issuance
 - can only increase equity by retaining profits
 - a common but strong assumption to get accelerator effects

Reserves vs. Liquid Assets

- Could think of liquid assets in place of reserves
- banks need to hold a precautionary buffer of liquid assets in case of a negative shock to assets or funding
 - loans are illiquid
- the return on liquid assets will affect the supply of loans (as in this paper)
- government may be able to affect the return on liquid securities
 - e.g., Krishnamurthy and Vissing-Jorgensen (2012): supply of US government bonds affects spread between treasuries and corporates
- note: effect is at the system level, not individual banks

Final thoughts

- Important topic: new perspectives on monetary policy channels
- An intriguing approach
- So why do banks hoard reserves without increasing lending?