Discussion of:

Banks, Liquidity Insurance, and Interest on Reserves in a Matching Model of Money

by Valerie Bencivenga and Gabriele Camera

Todd Keister
Federal Reserve Bank of New York
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The views expressed herein are my own and do not necessarily reflect those of the Federal Reserve Bank of New York or the Federal Reserve System.
Overview

- Interesting paper
  - introduces ideas from the banking literature into Lagos-Wright

- Aims to explain when banks will be used, and when cash / bank deposits will coexist
  - rich model; details are far from trivial

- Model has some policy prescriptions regarding interest on reserves

- I will organize my remarks around the title:
  (i) Banks, (ii) Liquidity Insurance, and (iii) Interest on Reserves in a Matching Model of Money
A simple model

- Two consumption goods \((d, c)\)

- Preferences: 
  \[ \theta_i u(d_i) + v(c_i) \]

- Two assets: 
  \[ m_i + k_i \leq \omega \]

  - capital yields \(\rho\) and money yields \(\frac{1}{\pi} (< \rho)\) if not spent
  - good \(d\) can only be purchased with money

- In autarky: 
  \[ c_i = \rho k_i + \frac{1}{\pi} (m_i - d_i) \]

- Uncertainty: \((m_i, k_i)\) chosen before \(\theta_i\) is known
Choice sets under autarky

slope = -1/π
Choice sets under autarky

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(i) Banks

- Suppose agents pool endowments in a “bank”

- One possible policy: bank offers fixed returns
  - 1 on early withdrawals; \( \rho \) on late withdrawals

- Bank can anticipate withdrawal demand (no aggregate uncertainty)
  \( \Rightarrow \) these returns are always feasible

- In equilibrium:
  - no unused money balances; high \( \theta_i \) types not “overly” constrained
  \( \Rightarrow \) allocation is same as if agents could observe \( \theta_i \) before choosing portfolio
Choice set with banking

slope = -\rho
Choice set with banking

- Clear welfare improvement
- Size of benefit depends on $\pi$

slope = $-\rho$

$c$

$d$

$\theta_L$

$\theta_H$
• Paper assumes accessing the bank is costly
  \[ \Rightarrow \text{only use bank if benefit is large enough} \]
  – this happens when \( \pi \) is large (see figure)

• In some cases, efficiency requires a mix of autarky and banking
  – interesting; realistic

• This is the role of banks studied in the paper
  – allocating money balances to those who need them
(ii) Liquidity insurance

- Banks can do other useful things as well

- Suppose only two types: $\theta_H > \theta_L$

- Ask: what is the (full-information) first best allocation?

$$\max \left[ \theta_H u(d_H) + v(c_H) \right] + \left[ \theta_L u(d_L) + v(c_L) \right]$$

subject to feasibility constraints

- Result:

$$d_H > d_L \text{ and } c_H = c_L$$
Edgeworth box

Note: dimensions of box determined are by bank’s portfolio choice
• What is incentive feasible in this setting?
  
  – paper imposes \[ c_i = \rho (\omega - d_i) \]

• Implement with simple demand deposit contracts
• More generally:

\[
\theta_L u(c_L) + v(c_L) \geq \theta_L u(c_H) + v(c_H) \quad \text{(IC1)}
\]

\[
\theta_H u(c_H) + v(c_H) \geq \theta_H u(c_L) + v(c_L) \quad \text{(IC2)}
\]

• **Cannot** be implemented using a simple demand deposit contract
• Cross-subsidizing types is efficient and incentive feasible

• Diamond and Dybvig call this activity “liquidity insurance”
  – banks insure agents against the $\theta_H$ shock

• Useful to distinguish:
  
  (i) allocating cash to those who need it
  (ii) insuring agents against type shocks

• Both are a type of “liquidity insurance”

• In this paper, banks do (i) but not (ii)
(iii) Interest on Reserves

- Institutional detail: banks reserves are held in two forms
  
  \( (a) \) currency in vault/ATMs
  
  \( (b) \) deposits at Federal Reserve

- Fed has started paying interest on \( (b) \)

- Reserves in this model resemble \( (a) \)

⇒ Policy prescription of the model: central bank should pay interest an vault cash
But...

- In this model (as in many others) the Friedman rule fixes everything
  - one implementation: pay interest on currency
  - impractical; here: paying interest on some currency is helpful

General point:

- Paper shows paying interest on reserves improves welfare assuming monetary policy is suboptimal
  - common approach, but questionable

- If FR is not optimal for some reason...
  - that same reason may make interest on reserves undesirable
Conclusions

• Interesting paper

• Part of an important research program

  – we need better models of money & banking to inform policy decisions

  – interest on reserves question is a good illustration

• Banking models can be tricky

  – idiosyncratic risk makes banks useful in more than one way

• I hope the authors continue this line of work (and others join them!)