Discussion of:
“Banks are not intermediaries of loanable funds – and why it matters”
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Summary

Research question
- What is the role of the financial sector in DSGE models?

Methodology
- Propose “Financing through Money Creation” (FMC)
- Incorporate FMC into DSGE Model

Main Findings
1. Allows large jumps in credit and money
2. Procyclical bank leverage
3. Quantity rationing of credit
Overview

- Paper asks an important and interesting question
  1. Large micro literature on the role of financial intermediation (e.g., Diamond-Dybvig (1983), Diamond (1984), Gorton and Pennacchi (1990))
  2. Most macro models either ignore financial intermediation or only model financial friction
  3. Recent financial crisis suggests having another look at banks in DSGE models

Discussion

- “Financing through Money” (FMC) model
- A few facts on money creation (deposits)
- Evaluating FMC in DSGE model
Efficient Benchmark

- Assume two agents: (E)ntrepreneur and (L)ender
  - E has great technology but no resources
  - L has resources but no technology

- Bank arranges loan from L to E

- E invests wisely and returns principal (+ interest) to L

- If banks are efficient, they can be safely ignored
Macro Model with financial frictions

- Suppose E can run away with the loan (e.g., Bernanke-Gertler (1989))
- E needs skin in the game $\Rightarrow$ borrowing restricted by net worth constraint
- Creates role for E’s net worth (“financial accelerator”)
- Bank $\sim$ financial friction (but no role beyond arranging loans)
Do these models capture financial intermediaries?

► No!
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- No!

- “Much of the earlier macroeconomics literature with financial frictions emphasized credit market constraints on nonfinancial borrowers and treated intermediaries largely as a veil” (Gertler and Kiyotaki, 2011)
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▶ “Much of the earlier macroeconomics literature with financial frictions emphasized credit market constraints on nonfinancial borrowers and treated intermediaries largely as a veil” (Gertler and Kiyotaki, 2011)

▶ What’s missing?
“Financing through Money Creation” Bank

1. Create monetary liabilities (deposits)

2. Household demand deposits

3. Bank’s net worth is endogenously determined

4. Bank equity capital is costly

5. Macroprudential and capital regulation constrain lending
Comment #1: The role of banks

- What is the relevant friction of FMC for DSGE models?

1. Discussion mostly focuses on the role on money creation (deposits)

2. But model also incorporates non-contingent lending rates, regulatory requirements, equity issuance costs, etc.

3. We could add even more frictions based on corp fin literature (e.g., bank runs, too-big-to-fail, government insurance, delegated monitoring, etc.)

⇒ Focus on adding the main constraint(s)
The new bank model (FMC)

- “Depositing a cheque does not create loans” (page 9)
- “Loans come before deposits” (page 12)
- “Deposits create their own reserves” (page 13)
- “Deposit multiplier has been refuted” (page 13)
- “Retail deposit banks have market power” (page 17)

⇒ But do aggregate deposits matter?
Higher nominal rate $\rightarrow$ higher price of deposits

Price of deposits: Deposit spread = Fed funds rate – deposit rate

1. Price increases most for liquid deposits (checking, savings)
   - From $\approx 0$ bps to 400 bps (savings) and 500 bps (checking)
2. Consistent with retail deposit pricing equation in FMC model
Higher nominal rate → large outflows of deposits

Year-on-year change in Fed funds and savings deposits

1. Savings deposits are largest category $6.5 trillion, 64% of total
2. Large flows: −12% to +24% per year (consistent with FMC)
Banks have market power over deposits

1. For each branch, run $\Delta Spread = \alpha + \beta \Delta FF + \varepsilon$
2. Plot average $\beta$ in 20 bins by local deposit competition

⇒ Higher price increases in less competitive local deposit markets
⇒ Consistent with market power in FMC model
Comment #2: The role of deposits

For banks:
- Deposits are **main source of bank funding**. Less prone to runs than wholesale funding, very hard to replace.
- Monetary policy affects bank lending ("bank lending channel")

For households:
- Deposits are the **main source of liquidity** for households
- Monetary policy affects total supply of liquid assets and liquidity premium (⇒ leverage, risk-taking, and cost of capital (Drechsler et al, 2014))
⇒ Incorporate implications of deposits financing
Results: Financial friction vs. FMC

- “Bank leverage tends to be pro-cyclical in the FMC model, but countercyclical in the ILF [i.e., financial friction] model”
- “Adrien et al. (2013) show a strong-comovement between changes in assets and debt”

⇒ Is financial sector leverage pro-cyclical?
Broker-dealers reduced leverage in 2008

5.4.2 Broker-Dealer Assets and Leverage

![Graph showing broker-dealer assets and leverage from 2005 to 2014.](image)

- Total Assets (left axis)
- Leverage (right axis)

Source: FINRA

Note: Leverage is the ratio of total assets to total ownership equity.

⇒ Consistent with VaR constraint (Brunnermeier-Pedersen, 2009; Adrian and Shin, 2012)
⇒ Similar result for hedge funds (Ang et al., 2013)
But higher leverage in commercial banking sector

(a) Capital and Leverage Ratios (Levels)

⇒ End up holding most of financial sector assets (e.g., ABCP conduit assets); government support was focused on commercial banks
Comment #3: More on financial sector leverage

Broker-dealers and hedge funds
- Delevered during the financial crisis

Commercial banks
- Expanded balance sheet during financial crisis
- Resulted in increase in leverage

⇒ Need to revisit pro-cyclical leverage
Conclusion

- Paper asks an interesting and topical question

- Main Comments
  - Focus on a single (or fewer) constraints
  - Examine implications of deposits financing on bank funding and liquidity premia
  - More on pro-cyclical leverage