

Discussion of Financial Business Cycles

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- ▶ **Very** nice paper!
- ▶ Very important to place **banks** in a business cycle model with financial frictions

Main comments

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Actually: "**Robin Hood**" business cycles

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Entrepreneurs:
Borrow from
banks



Banks: borrow
from Savers



Savers/Depositors

How different from this?

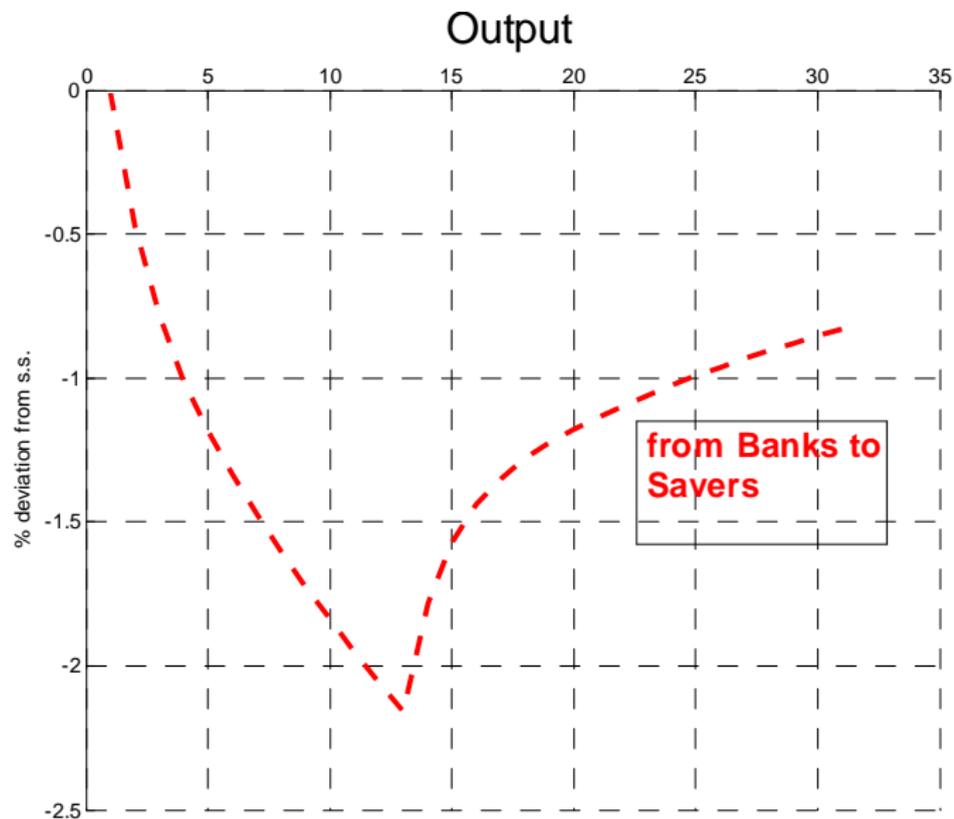


Or from this?

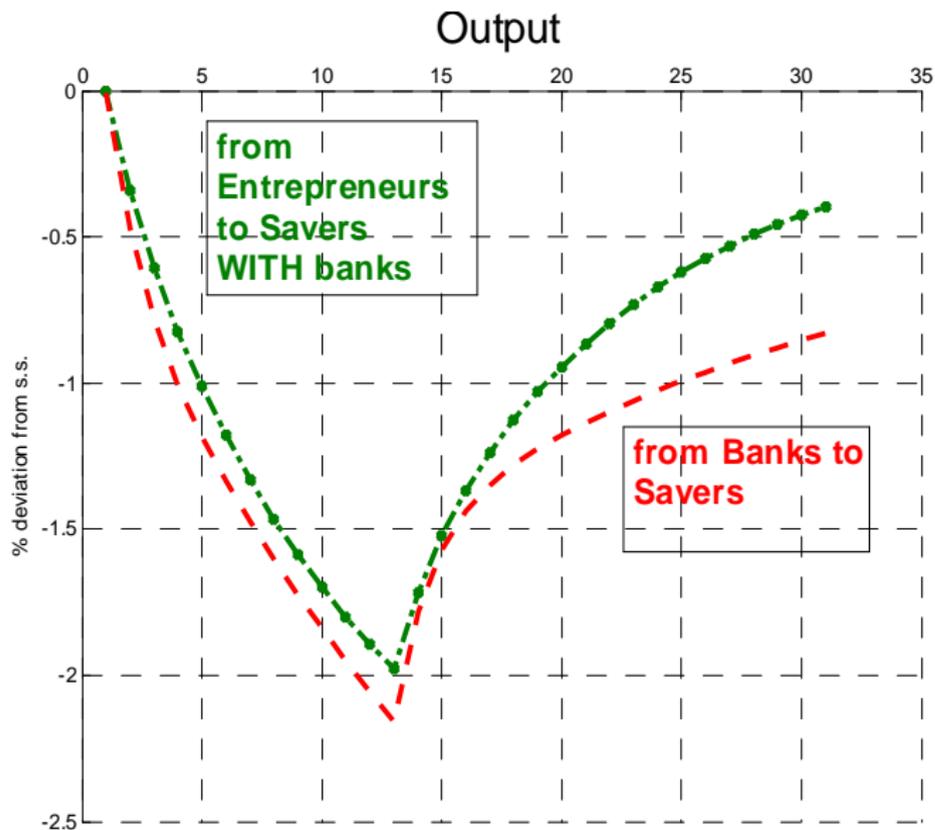


- ▶ Redistributing wealth from Borrowers to Savers
- ▶ Borrowers can be either **Entrepreneurs** or the **Banks**

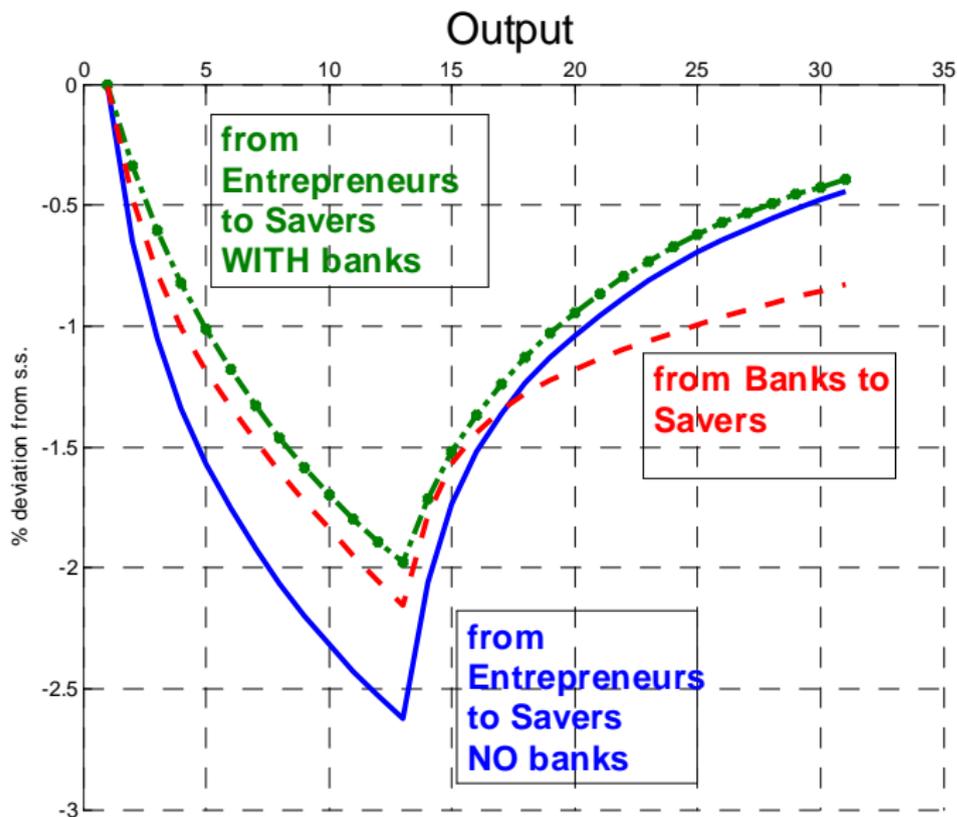
A redistribution from Banks to Savers



A redistribution from Entrepreneurs to Savers (with banks)



A redistribution from Entrepreneurs to Savers (NO banks)



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- ▶ Balance sheet with no frictions for banks \rightarrow Equity = 0

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- ▶ Novel friction: **capital requirement** \rightarrow banks cannot "borrow from depositors" more than a fraction of assets (= loans to Entrepreneurs)

$$D \leq \gamma(L - \underbrace{\varepsilon}_{\text{equity shock}})$$

What is missing?

Assets	Liabilities
loans (L)	deposits(D) bank debt?

1. Cannot think of banks' **leverage**
2. No model of **interbank** market

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(Why) Are banks different?

- ▶ Borrow in order to lend: **YES here**
- ▶ Borrow **short** to lend **long** term: **NO here**
- ▶ Maturity mismatch → Bank **runs**: **NO here**
- ▶ Are much more **leveraged** than other agents in the economy:
NO here

Default shocks?

Financial shock? A "default shock"

1. Take money from **banks** → give it to **constrained borrowers**
(→ relax borrowers' budget constraint)

$$\underbrace{C_t^{borr}}_{\text{consumption}} + q_t \underbrace{(H_t - H_{t-1})}_{\text{durable investment}} + \underbrace{R_{L,t-1} L_{t-1}}_{\text{repayment on past debt}} = \text{income} + L_t + \underbrace{\varepsilon_t}_{\text{default shock}}$$

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2. Simultaneously tighten borrowers' **collateral** constraint

$$L_t \leq \gamma_{borr} q_{t+1} H_t - \underbrace{\varepsilon_t}_{\text{default shock}}$$

Financial shock? A default shock (con't)

- ▶ Banks' budget constraint

$$C_t^{banks} + \underbrace{R_{D,t-1} D_{t-1}}_{\text{remuneration on deposits}} + \underbrace{L_t}_{\text{loans to borrowers}} = \text{banks income} + \underbrace{D_t}_{\text{new deposits}} - \underbrace{\varepsilon_t}_{\text{default shock}}$$

- ▶ Banks' borrowing constraint

$$D_t \leq \gamma_{banks} (L - \varepsilon_t)$$

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 2. But borrower all of a sudden **can borrow less** today (exogenous)
 3. Initially banks get a small loss because of the small punch → Affect **both** their budget and collateral constraint (exogenous)
 4. Banks **punch back** much harder by cutting lending ("punching bag effect", endogenous)
- **Reinforce** credit squeeze in (2)

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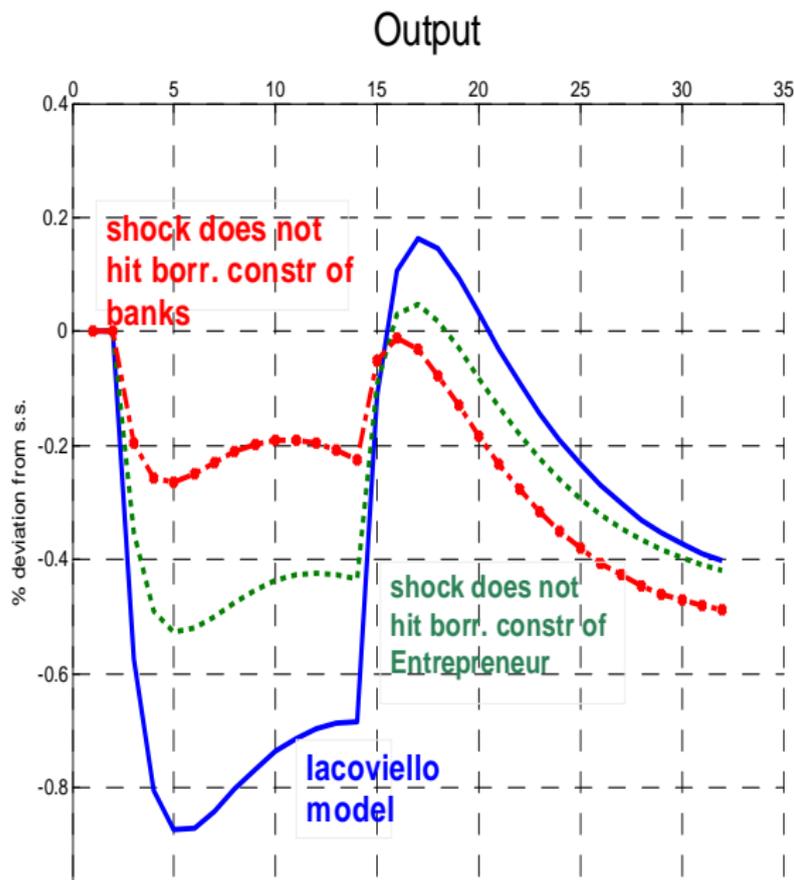
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- ▶ Shouldn't **borrowing constraints** tighten endogenously in response to wealth shocks (and viceversa)?

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- ▶ Hard to interpret them as **structural**
- ▶ Shouldn't **default** be an **endogenous** feature?
- ▶ Shouldn't **borrowing constraints** tighten endogenously in response to wealth shocks (and viceversa)?
- ▶ "Redistribution" typical **effect** (not cause) of underlying financial distress/default

It does matter where the shock hits



Conclusions

- ▶ Great paper!
- ▶ We should think harder about how to model:
 1. banks
 2. "financial" shocks