Payments, Credit and Asset Prices

by

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Focus of paper

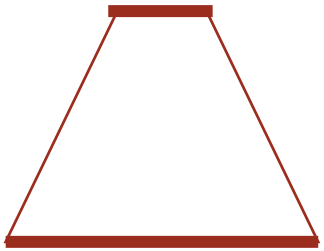
- Banks reserves/liquidity management
  implications on asset prices
  portfolio choice
- Inside vs. Outside money
- Optimal reserves system
  - scarce or abundant reserve system
- Effectiveness of MoPo, especially OMO
- Implications on price level (inflation)

Outside-Inside Money

Interbank layer

↑instructions

End user layer



Outside Money:

reserves (borrowed or unborrowed)

Inside Money:

demand deposits, credit lines

Outside-Inside Money

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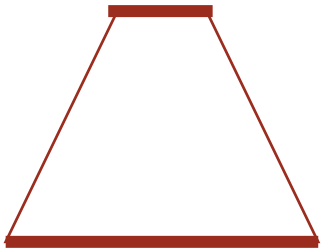

Outside Money:

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Inside Money:

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- Frictions:
  - Real assets (trees) and human capital are illiquid can not be used to pay for consumption
  - Generalized CIA constrained
  - Leverage costs

Outside-Inside Money

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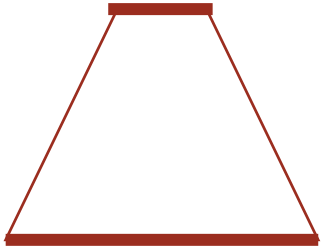

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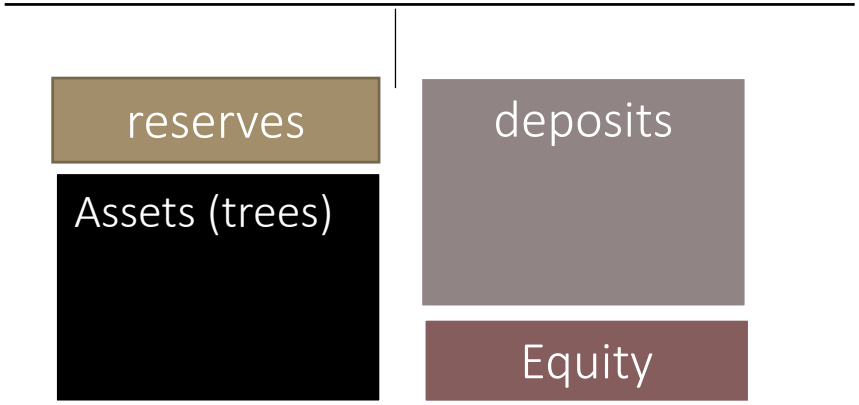

Leverage costs

Outside-Inside Money

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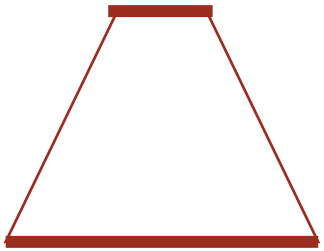

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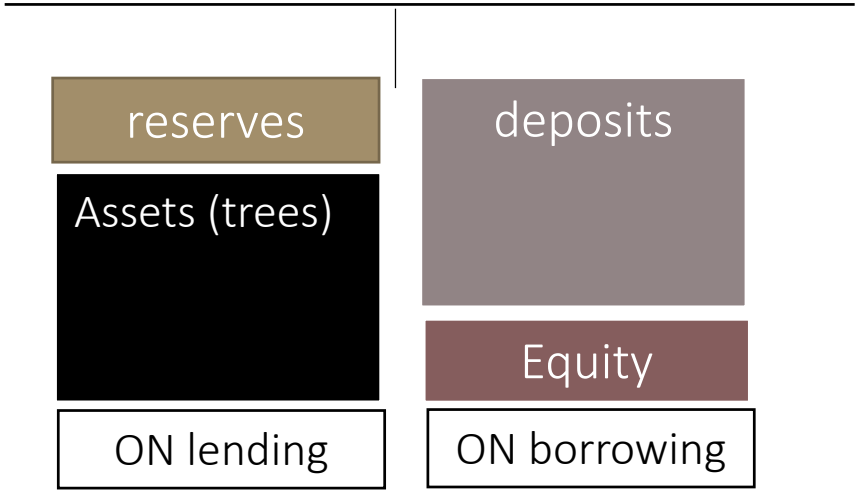

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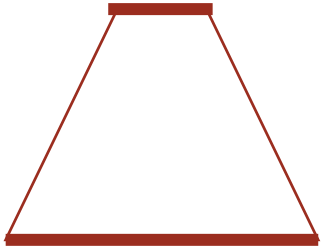

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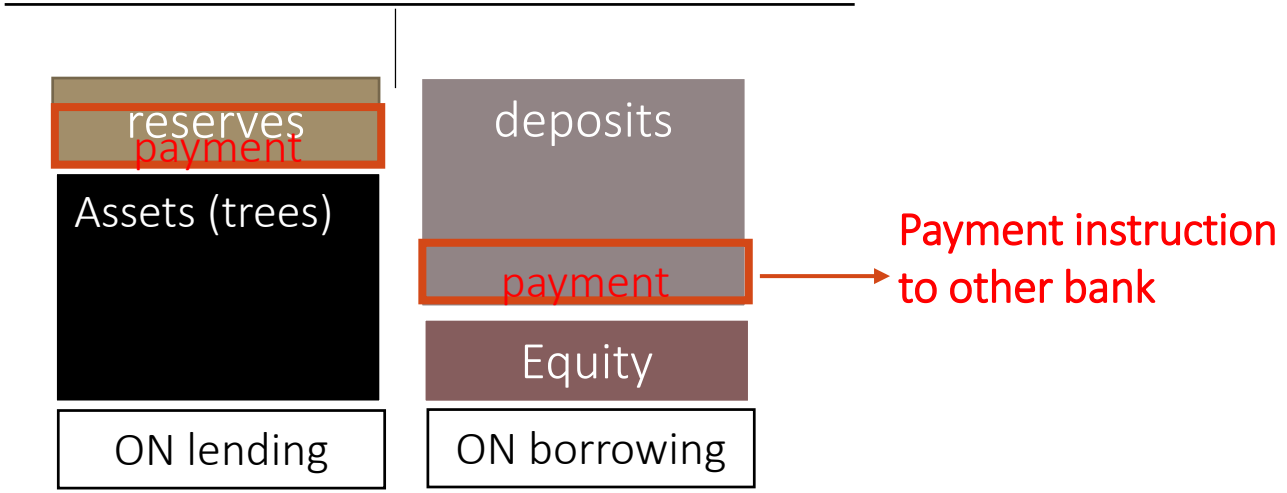
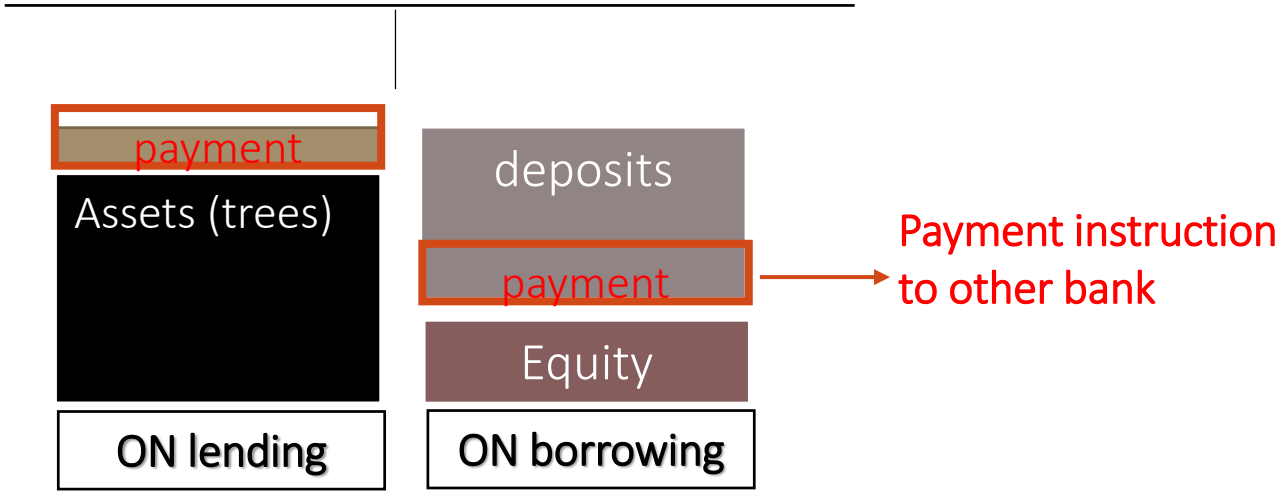


- KEY: Bank's reserve/liquidity management

Two regimes

- Abandoned reserves
  - Interbank loans and reserves are perfect substitutes
- Scarce reserves



Impact on

- Asset prices

= E[discounted cash flows] - uncertainty premium + **collateral/liquidity benefit**

- Price level (inflation)
  via quantity equation

$$PT = \overline{\nu}(D + L)$$

- T = Transactions include
  - Consumption
  - Security purchases

Shock scenario

- (Knightian) uncertainty shock
  - Asset prices/collateral value ↓
  - Leverage cost ↑
  - Inside money supply ↓
  - Inside money demand … ↓
    since payments for assets

Price level (inflation/deflation) depends on relative strength

- Other possible shocks
  - Higher payment instruction volatility

Policy implication

- Leverage cost
  - For banks
    To created “inside money” (deposits + credit lines)
    - Collateral is reserves/asset side of their balance sheet
  - For government
    to created “outside money”
    - Collateral is tax base

- If banks’ leverage cost > government’s cost
  ⇒ create more reserves

Comment 1

- *Micro-foundation of leverage costs is key to get a better understanding of policy implication?*

- *Does bank regulation make private leverage more costly?*

  - *Can it tilt optimal system away from a "scarce reserve system" to "abundant reserve system"?*
  - *Insights for US switch in 2008?*

- *Is it liquidity regulation or capital regulation?*
  - *Capital can issued costlessly in the next period*
  - *Liquidity regulation requires banks to hold large amount of HQ-liquid asset (demand for reserves is high)*

Effectiveness of MoPo

- MoPo changes
  - Interest on reserves (affects asset prices)
  - Quantities through OMO or QE

- QE changes the "collateral mix"
  - Replace assets with reserves (with better collateral value)
  - In "scarce reserve regime" ⇒ effective
  - In "abundant reserve regime" ⇒ ineffective

Q2: Bank concentration

- *Thought experiment:*
  only one monopolistic bank
  - *Removes need to interbank lend/borrow of reserves*

- *Is analysis different in countries with few large banks compared to countries with many banks?*

- *Do bank mergers affect the analysis?*

Q3: Quantification & Reserve overdraws

- *How big are the quantitative effects on*
  - *asset prices*
  - *inflation?*

- *What are the implications if reserves requirements only have to be met over a 2 week window?*

- *Implications if more people can have access to reserves? "Digital central bank checking account for everyone"*
  - *Do banks become useless?*

	Piazzesi-Schneider	I Theory of Money (BruSan)
Frictions	Financial (CIA, leverage cost,…)	Financial (incomplete markets)
Inside money	Transaction role (endusers can't use outside money)	Store of value/safe asset
Role of banks	Create inside money for transaction	Intermediate (credit, diversify, inside money)
MoPo *affecting asset prices*	Change collateral mix Change money multiplier No impact on GDP	Redistributive – recap banks Change money multiplier improves GDP
Broad money supply targeting	Missing inside money can't be restored with outside money	Outside money store of value, but can't diversify idio risk money demand is higher
Shock	(Knightian) uncertainty shock	Productivity (level) shock Endogenous risk dynamics - Liquidity spiral, fire sales - Disinflationary spiral
Crisis	- Shortage of inside money needed for transactions	- Endusers want more safe assets - Credit crunch

Conclusion

- Banks' reserve/liquidity management
- Banks or government leverage depends on leverage cost
- Q1: Micro-foundation of leverage cost
  - Role of bank regulation (capital vs. liquidity)
- MoPo via collateral mix (in scarce reserve regime only)
  - Monetarist view:
    restore "missing inside money" to keep total money supply stable
  - "I theory": individually: inside/outside money perfect substitute
    Economy wide: only banks can diversify
- Q2: Bank concentration
- Q3: Quantify/calibrate
  Can it explain the crisis?
- Big Q4:
  How do we explain the current low inflation
  given low unemployment rate, capitalized banks (in US), …