

Bank Capital, Agency Costs, and Monetary Policy

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Banking, Financial Stability and the Business Cycle

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Background

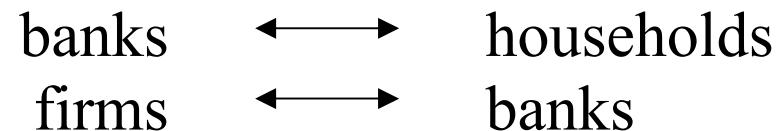
- Evidence on financial frictions
- Lending varies over the business cycle. In particular, credit crunches often coincide with deep recessions

Questions

- Are financial frictions important in *generating* or *amplifying* the business cycle?
 - explain why small shocks may have large effects?
 - explain dramatic recessions / depressions?
- This paper: Are frictions in the banking sector important?

Model: Overview

- Model with two layers of moral hazard:



- Dynamic and quantitative version of Holmstrom & Tirole (*QJE* 1997)
- Quantitative version of Chen (*JME* 2001)
- Added bank sector with second layer of moral hazard compared to Carlstrom & Fuerst (*Carnegie-Rochester* 2001)

The Model

- Final goods production:
 - Competitive
 - $Y = zK^\theta H^{1-\theta}$
- Entrepreneurs use final goods to produce new capital:

$$\text{invest } i \rightarrow \text{new capital} = \begin{cases} 0 & \text{if failure} \\ Ri & \text{if success} \end{cases}$$

with probability of success depending on firm's actions

- Total capital: $K_{t+1} = (1 - \delta)K_t + \sum_{\text{successful}} Ri_t$

The Model (contd.)

- Banks:
 - lend l to entrepreneur
 - monitor entrepreneur?
 - monitoring makes “shirking” less attractive
- Houesholds:
 - lend a to bank
 - require that $a < l$ so that banks have incentives to monitor
 - CIA constraint
- Central bank:
 - Taylor rule

Results

- Financial friction in banking sector
 - dampens impact effect of monetary policy shocks
 - increases persistence of shocks (?)

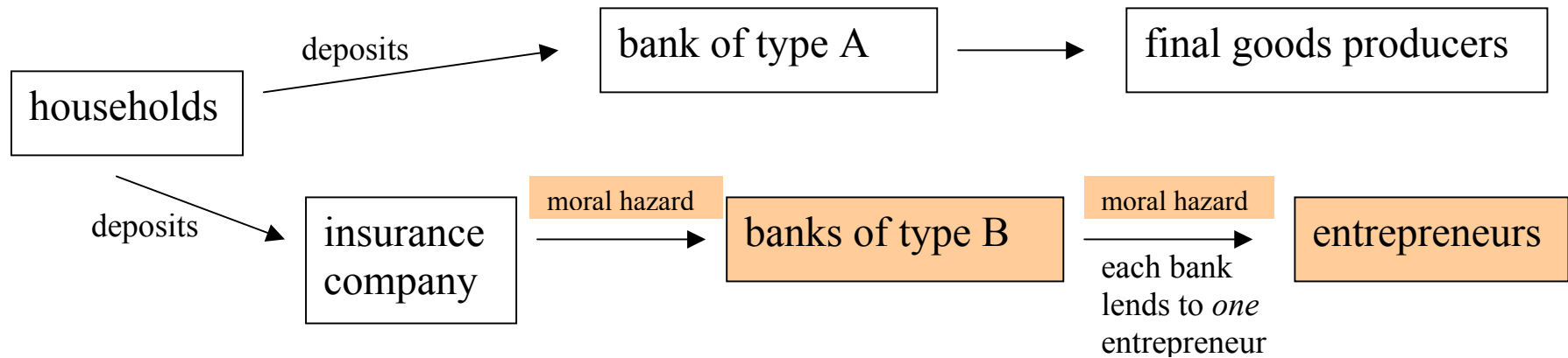
... reinforces Carlstrom & Fuerst's results
- Bank capital-asset ratio is countercyclical, as in reality

Comments on the Model

- Two models!
 - Households risk neutral in most of the paper
 - ... the model MM describe and calibrate
 - ... not quantitatively interesting (?)
 - ... little contribution over Chen
 - Households risk averse in the “extended model” that is used for simulations
 - ... new utility function
 - ... new cash-in-advance constraint
 - ... new bank and insurance scheme
- Why not drop the “basic model” and focus on the one that is used for quantitative analysis?

Comments on the Model (contd.)

- Is the (extended) setup realistic?



Isn't the insurance company actually the bank? Why can the insurance company diversify but not the bank?

Comments on the Model (contd.)

- Is direct lending from households to firms forbidden? Or does it never happen in equilibrium?
- Theory and model part is otherwise nice but the contribution here is the quantitative analysis...

Comments on Calibration

- The fraction of activities that suffer from moral hazard
 - Investments rather than output
 - *All* investments – no firm has sufficient net worth to finance projects on its own
- For a particular bank, all project either fail or succeed
 - MM say that results hold as long as returns are not uncorrelated...
 - Qualitative results may survive, but *quantitative*?
- Reputation & Repeated Games?
 - One-period contracts & anonymity most relevant for small firms?
 - How relevant is this assumption for banks?

Comments on Calibration (contd.)

- Quarterly model
 - Is timing realistic?
 - Does the timing matter?
- Why different utility functions for leisure in the two models?
 - Model 1: $u = c - \chi \frac{(h+v)^\gamma}{\gamma}$
 - Model 2: $u = \log c - \chi \log(1-h-v)$
- How is CA ratio defined in the extended model?

$$CA = \frac{\text{bank B capital}}{\text{bank B lending}}, \text{ or } CA = \frac{\text{bank B capital}}{\text{bank A lending} + \text{bank B lending}} \quad ?$$

Comments on Quantitative Analysis

- Fluctuations caused by monetary policy shocks appear very small compared to those caused by productivity shocks
 - Is monetary policy not important here?
 - Why so little focus on productivity shocks?
- Does the monetary policy rule matter?
 - Experiment with different rules?

How to Interpret the Results

... no amplification of shocks
... no important effect on persistence

- Shall we conclude that financial frictions in the banking sector do not contribute to our understanding of business cycle?
- Does the paper imply that central bankers need not worry about boom-bust lending cycles, credit crunches, etc?
- Or does the model just fail to capture important frictions? Could one introduce (direct) shocks to asset values? Would that help?

Conclusion

- Nice theory and model
- Nice first quantitative study