Discussion of:

Financial Risk Capacity

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The question

- Why do economies recover slowly from a financial crisis?

- Baseline case: $$K_{t+1} = I_t + (1 - \delta) K_t$$

  where $$I_t = \theta_t S_t$$

  and $$\theta_t = \left\{ \begin{array}{c} 1 \\ 0 \end{array} \right\} \text{ in } \left\{ \begin{array}{c} \text{normal times} \\ \text{crisis} \end{array} \right\}$$

- When crisis ends, MP_K will be high $\Rightarrow$ strong incentive to invest

  $\Rightarrow$ rapid growth

One view: Intermediaries are undercapitalized

- Suppose investment is constrained by capacity of financial sector
  - capacity depends on equity
- Losses associated with crisis reduce bank capital dramatically

$\Rightarrow$ investment is choked off even if MP_K is high

But ... this story only moves the puzzle to the financial sector

- If MP_K is high, intermediation should be very profitable
  - shadow value of equity should be high
  - why doesn't new equity flow into these intermediaries?

This paper

- Maybe intermediation is not so profitable in the wake of a crisis
  - when capacity falls, intermediation becomes less efficient
  - this fall offsets the high MP_K
- Mechanism: an adverse selection problem
  - when $\left\{ \begin{array}{l} \text{fewer loans made} \\ \text{less capital purchased} \end{array} \right\}$, average quality is lower
  - this could reduce profitability of intermediation

$\Rightarrow$ no incentive to invest in intermediaries, so capacity remains low

$\Rightarrow$ investment and growth rate are lower than before crisis

- Paper lays out a rich, dynamic model
  - intermediaries necessarily take on risk
  - bad aggregate shock $\longrightarrow$ fall in their equity
  - lower capacity $\longrightarrow$ adverse selection problem worsens
- Uses the model to generate illustrative examples, examine policy interventions
  - interesting dynamics as economy slowly grows out of the problem
- Nice contribution of both ideas and methodology
  - would like to understand the effects at work better ...

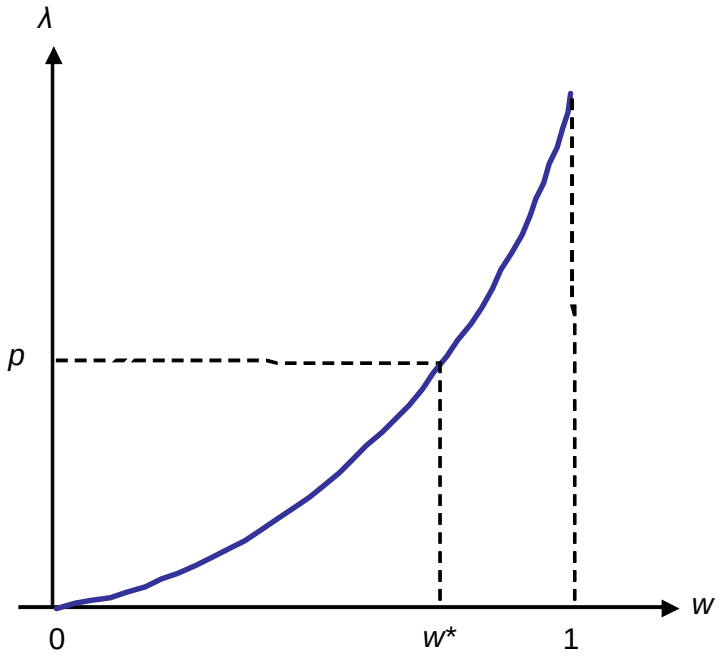
A simple model

- Savers have machines of varying quality
  - machine of type ω will become $\lambda(\omega)$ machines after depreciation
  - ω is private information
  - chooses which units to sell in pooling market at price p
  - unsold units can be consumed

$$\max_{\{\omega^*\}} \; p\omega^* + \int_{\omega^*}^{1} \lambda(\omega)\, d\omega$$

FOC:

$$p = \lambda(\omega^*)$$



- Entrepreneurs buy depreciated machines and produce

$$\max_{\{k\}} \; f(k) - qk$$

FOC:

$$q = f'(k)$$

- Banks intermediate
  - buy machines from capital owners at price p
  - machines depreciate while in bank's hands
  - sell to entrepreneurs, receiving $q\lambda(\omega)$
  - scale constrained by equity

$$Q \leq \psi n$$

- ROE $=$ profit per unit of intermediation * leverage

$$= \left(qE\left[\lambda(\omega) \mid \omega \leq \omega^*\right] - p\right) * \psi$$

- Crisis: negative shock to bank equity
  - less intermediation, investment $\longrightarrow k$ falls $\longrightarrow q$ rises

$$ROE = \left(qE\left[\lambda\left(\omega\right) \mid \omega \leq \omega^{*}\right] - p\right) * \psi$$

- Suppose there were no adverse selection problem
  - $\lambda\left(\omega\right) = 1$ for all $\omega \Rightarrow p = 1$

$$ROE = \left(q - 1\right) * \psi$$

- If ψ fixed, ROE rises $\Rightarrow$ banks should attract more equity
  - rapid recovery

- With λ increasing in ω :

$$ROE = \left(\underbrace{q}_{\uparrow} \underbrace{E\left[\lambda\left(\omega\right) \mid \omega \leq \omega^{*}\right]}_{\downarrow} - \underbrace{p}_{\downarrow} \right) * \underbrace{\psi}_{(?)}$$

- Net effect depends on shape of λ
  - and on behavior of leverage ψ across states
- Paper shows the resulting behavior can be quite rich
  - ROE can be non-monotone in ω^{*}
- Can generate slow recapitalization, recovery

Comments

(1) Adverse selection and investment

- There is much discussion of adverse selection in asset markets
  - some mortgage-related assets were bad; difficult to tell which ones
  - prices fall; quantity of trade is low
- The issue there is trade in *existing* assets (linked to past loans)
- Story here is more about new investment
  - saving is channelled into machines that get used in production
  - how important is adverse selection is this context?

- Suppose a bank is going to lend less (because of funding constraints)

- One option: charge a higher interest rate
  - will attract a worse pool of borrowers

- Another option: tighten lending standards
  - leave rates unchanged; stop making certain types of loans
  - average quality of loan would rise (and average rate would fall)

- To what extent can banks get around this adverse selection problem?

- The *threat* of adverse selection may affect bank behavior
  - could explain why banks raise lending standards instead of rates
- What are the implications for the return on bank equity?
  - not making any profitable, risky loans may be costly
- Could this alternate mechanism lead to the same outcome?
  - some implications are different
  - but perhaps could explain the same phenomenon

A related point

- In the model, average $\left\{ \begin{array}{l} \text{loan} \\ \text{capital} \end{array} \right\}$ quality falls after a crisis
  - perhaps true for assets traded in some markets
- Story people usually tell about banks is the opposite
  - lending standards were low during the boom years
  - become much tighter during/after the crisis

  $\Rightarrow$ average loan quality goes up
- Is this a model of banks or market-based intermediation?
  - could it be modified to be a model of banks?

(2) The function $\lambda(\omega, \phi)$

- Much seems to depend on the shape of this function

- How can we think about what shapes are "reasonable"?
  - probably difficult to calibrate to data, but ...

- How might λ vary across countries, over time?
  - related to structure of financial system? regulation?

- In what situations would we expect the adverse selection effects to be stronger/weaker?
  - when should we expect slower/faster recovery?

Conclusion

- Very nice paper

- Would like to think more about adverse selection in intermediation
  - are banks different from other forms of intermediation?
  - does it matter?

- Would like to understand better how λ affects outcomes
  - are these effects always important?
  - or only in certain situations?