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 \( \theta_t = \begin{cases} 1 & \text{normal times} \\ 0 & \text{crisis} \end{cases} \)

- 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 \( \begin{cases} 
  \text{fewer loans made} \\
  \text{less capital purchased} 
\end{cases} \), average quality is lower
  – this could reduce profitability of intermediation
  ⇒ no incentive to invest in intermediaries, so capacity remains low
  ⇒ investment and growth rate are lower than before crisis
• Paper lays out a rich, dynamic model
  – intermediaries necessarily take on risk
  – bad aggregate shock $\rightarrow$ fall in their equity
  – lower capacity $\rightarrow$ 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 $\omega$ will become $\lambda(\omega)$ machines after depreciation
  - $\omega$ is private information
  - chooses which units to sell in pooling market at price $p$
  - unsold units can be consumed

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

FOC:

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

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• Entrepreneurs buy depreciated machines and produce

\[
\max_{\{k\}} \quad f(k) - qk
\]

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

$$= (qE[\lambda(\omega) \mid \omega \leq \omega^*] - p) \ast \psi$$
• Crisis: negative shock to bank equity
  - less intermediation, investment $\rightarrow k$ falls $\rightarrow q$ rises
    \[
    ROE = (qE [\lambda (\omega) \mid \omega \leq \omega^*] - p) \ast \psi
    \]

• Suppose there were no adverse selection problem
  - $\lambda (\omega) = 1$ for all $\omega \Rightarrow p = 1$
    \[
    ROE = (q - 1) \ast \psi
    \]

• If $\psi$ fixed, ROE rises $\Rightarrow$ banks should attract more equity
  - rapid recovery
• With $\lambda$ increasing in $\omega$:

$$ROE = \left( q \cdot E[\lambda(\omega) | \omega \leq \omega^*] - p \right) \cdot \psi$$

• Net effect depends on shape of $\lambda$
  
  – and on behavior of leverage $\psi$ across states

• Paper shows the resulting behavior can be quite rich
  
  – ROE can be non-monotone in $\omega^*$

• 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 \( \{ \frac{\text{loan capital}}{\text{capital}} \} \) 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 $\lambda$ 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 \( \lambda \) affects outcomes
  - are these effects always important?
  - or only in certain situations?