Discussion of 'Funding Shocks and Credit Quality' by E. Perotti and M. Rola-Janicka

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Motivation

- The arrival of financial crises usually surprises people
- One explanation for this is 'irrational exuberance' which makes people overoptimistic in booms and leads to a build-up of risk
  - This explanation is based on irrationality
- Another explanation is that the build-up of excessive risk in booms is caused by agency frictions and/or pecuniary externalities
  - This is fully consistent with rationality
- The current paper builds a theory of crises based on rational explanations
  - The key frictions are limited liability, deposit insurance and imperfect information

The Baseline Framework (1)

- The state of the economy is characterized by two exogenous shocks
  - Productivity α
  - Funding supply s
- Informed (Global) banks with limited liability/insured deposits
  - Observe the true state of the economy
  - Decide how much to invest in 'productive' and 'speculative' assets (plus storage)
- Uninformed (Local) unlevered investors (Extension: local banks with limited liability/insured deposits)
  - Observe only the price at which the speculative asset is traded and infer the state of the economy
  - Decide how much to invest in the 'productive' asset and how much to store

The Baseline Framework (2)

- Productive asset
  - Safe return which is decreasing in amount invested
  - Return higher with higher productivity α
- Speculative asset
  - In fixed supply so price varies with demand
  - Delivers a return R with probability $q(\alpha)$, zero otherwise
  - $q'(\alpha) > 0$
- Storage with safe return equal to unity

The Mechanism: Informed banks

- Informed banks observe α and s and choose investments

$$x + py = s$$

- All funding s is debt funding
  - But importantly the bank has 'charter value'

$$\alpha\sqrt{x} - x > 0$$

  - This acts like equity despite the absence of loss absorbent liabilities
- Risk shifting only attractive when funding s is large enough relative to this 'equity'
- Demand for the risky asset also influenced by its expected return
  - Driven by $q(\alpha)$
  - When $q'(\alpha)$ is large, demand is high when fundamentals α are good

The Mechanism: Uninformed investors/banks (1)

- Price of speculative asset p is determined by market clearing
- Inference is complicated by the two factors that drive the investment of the informed
  - Higher price p could mean higher α (domestic fundamentals) or higher s (capital flows)
- Three possibilities
  - The price is so low that it can only occur when s is low: α perfectly revealed
  - The price is so high that it can only occur when s is high: α perfectly revealed
  - The price is intermediate: either high s and low α or low s and high α

The Mechanism: Uninformed investors/banks (2)

- The last case is the most interesting
  - Within this region, investment is increasing in p
  - Price is a noisy signal of better fundamentals
- If investors are unlevered, this is a fully rational + efficient outcome in an imperfect information environment
- Inefficiency comes when investors are local banks with limited liability and insured deposits
  - Productive asset is risky for the follower banks because its return is uncertain
  - They may overinvest in this asset (and underinvest in storage) due to DI subsidy to risk-taking

Comments (1)

- Nice, clean and intuitive story!
  - Asset price boom attracts (rational but uninformed) investors because it is a (noisy) signal of better fundamentals
  - However news increases uncertainty
  - When investors are leveraged themselves, they like the uncertainty due to safety net guarantees
- Clear policy implications for uninformed bank regulators: countercyclical capital requirements are needed
- I buy the imperfect info assumption
  - outsiders never have the information to tell if a bank is risk-shifting or investing on the basis of fundamentals

Comments (2)

- I also buy into the aim to explain why (and when) financial institutions may choose to rationally take risk
  - important for policy to understand whether risk taking is rational or based on over-exuberance
- Important for whether price vs non-price measures are more effective.
- Often heard argument:
  - When it is rational risk taking, taxes would be effective in forcing agents to correctly price under-priced risk
  - When it is 'irrational exuberance', quantity limits like LTV constraints may be needed
- Perhaps this could be further explored in the paper as a way of strengthening the motivation
  - How does the appropriate policy response change when the uninformed agents are just over-optimistic about α?

Comments (3)

- Motivation for the paper: reconcile the underestimation of risk in booms with rational behaviour
- But: is risk really underestimated in this model?
  - Uncertainty is high during the period of higher real estate prices and risk taking; when a crisis occurs it is an event which was fully (probabilistically) anticipated
  - Indeed, risk shifting occurs precisely **because** uncertainty/risk is high
- This is not what we observe in practice.
  - Market measures of uncertainty fall when asset prices are high and optimism is high
  - Maybe we need behavioural explanations after all

Comments (4)

- Crises are shown to be consistent with rational behaviour but with the help of an exogenous shock to funding supply
  - Where does the increase in funding come from?
  - Is it rational or are the providers of debt ignoring risk themselves?
- The fact that all deposits are insured helps the authors to avoid this question
  - But what if (realistically) part of the funding is uninsured? (e.g. repo, interbank, etc)
- Seems worthwhile to explore the robustness of the story to the presence of uninsured deposits

Summary

- Nice paper
  - Asset price boom is a (noisy) signal of better fundamentals
  - But: uncertainty rises and leads to risk shifting
- Policy implications: countercyclical capital/reserve requirements
- Comments
  - Is anyone really surprised when a crisis occurs in this model?
  - Does it matter if crises occur due to rational risk shifting or irrational exuberance?
  - How does uninsured funding change the story?