Discussion of:

Bank Runs, Financial Fragility, and Credit Easing

by Manuel Amador and Javier Bianchi

Todd Keister
Rutgers University

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Overview

- Paper develops a dynamic, GE model of banking crises
- Aims to better understand the (full) interaction between:

  asset prices $\Leftrightarrow$ bank failure

- Default is a strategic choice by a bank
  - somewhat novel in the banking literature; generates distinct implications
- Studies two types of banking crisis in this framework
  - "fundamentals": no run by creditors
  - "expectations": creditors run whenever bank is vulnerable
- Derives policy implications
  - asset purchases can be desirable only in the expectations case

Outline

- Key elements of the model
- Bank failure: what is different here?
- Intuition for results
  - fundamentals crises
  - expectations crises
- Three comments

Key elements of the model

- Banks issue one-period bonds (or deposits?), b_t
  - invest in capital k_t that produces output $z \in \{\bar{z}, \underline{z}\}$ each period
  - can buy/sell capital at price p_t
- Each period, a bank chooses between:

Repaying:

$$V_t^R(b,k) = \max_{b',k',c} \ln(c) + \beta V_{t+1}(b',k')$$

s.t.

$$c = (\bar{z} + p_t)k - p_t k' - Rb + b'$$

$$b' \leq \bar{b}_t(p_t, k_t)$$

Defaulting:

$$V_t^D(b,k) = \max_{k',c} \ln(c) + \beta V_{t+1}^D(b',k')$$

s.t. $c = (\bar{z} + p_t)k - p_t k'$

- Initial debt b_0 is given
- Focus is on decisions in initial period; no default for $t \geq 1$

Bank failure

- In many models, a bank fails if it *cannot* meet its obligations
  - liabilities > value of assets (liquidation value → illiquid)
    (fair value → insolvent)
  - failure/survival margin is about current assets vs. current obligations
- Here: a bank fails when it *chooses* not to meet its obligations
  - when $V^D > V^R$ (even though repayment is feasible)
  - failure/survival margin is also about future profits vs. outside value
- My focus: the implications of this alternative model of failure
  - how does is affect the structure of equilibrium?
  - and the policy implications of the model?
  - [later] how should we interpret this default choice?

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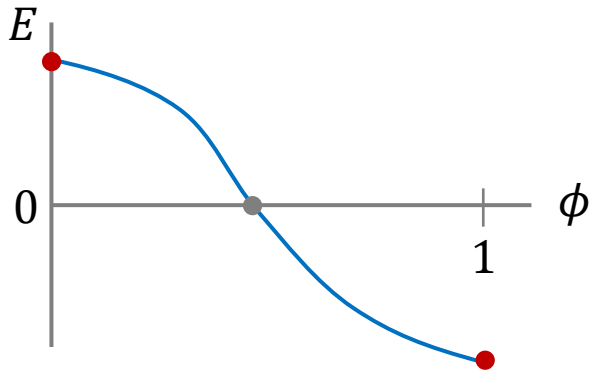
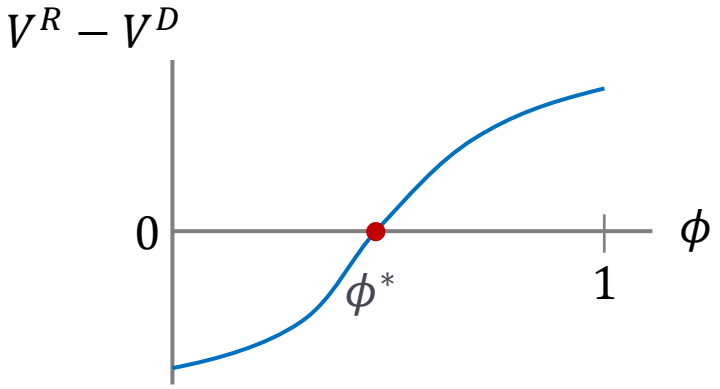
A fundamentals crisis

- Assume banks can always issue new deposits if they satisfy $V^R > V^D$
  - generates the borrowing constraint $b' \leq \gamma_t p_t k_t$
- If initial debt is sufficiently high, there is a unique eqm in which:
  - all banks default
  - $p_t \to \frac{\beta}{1-\beta}\underline{z}$ (value of capital to a defaulting bank)
- If initial debt is sufficiently low, there is a unique eqm in which:
  - all banks repay
  - $p_t \to \frac{\beta \bar{z}}{1-\beta-(1-\beta R)\gamma^R}$ (value of capital to a surviving bank, which can lever up)
- In between …
  - equilibrium is again unique
  - and involves some banks defaulting while other repay

Why no multiplicity in the middle region?

- When other banks fail, they sell assets and push down price p
- If default is based on current equity → my bank is more likely to fail
  - complementarity can generate multiple equilibria: $\phi^* = 0$ and $\phi^* = 1$

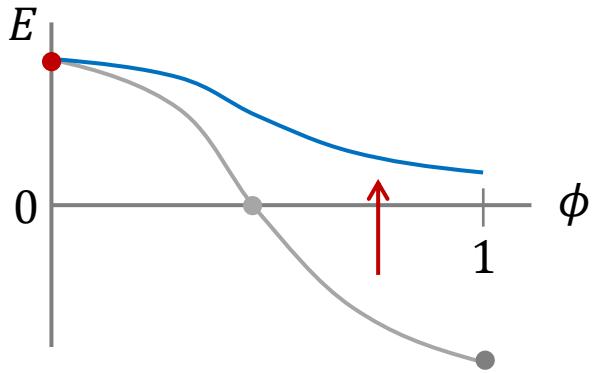


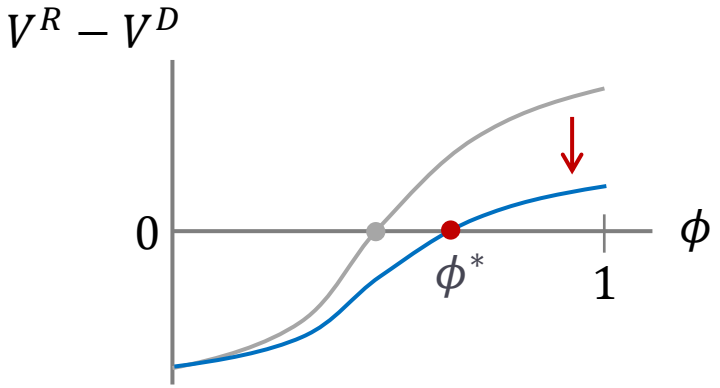


- If default is strategic, default decisions become substitutes
  - when other banks fail and price falls → return on assets is high
  - stronger incentive to repay and stay in operation
  - unique equilibrium, asymmetric. Implies $V^R = V^D$.

Policy analysis

- Suppose the government can take costly actions to increase p
  - asset purchases; costly because govt is bad at holding assets
  - mitigates the impact of other failures on p (and, hence, on my bank)





- Usual model: improves my bank's position; can eliminate bad eqm
- Here: weakens the incentive to repay (higher $p \rightarrow$ lower profits)
  - increases the fraction of banks defaulting in equilibrium

- A caveat: more banks defaulting in equilibrium sounds bad, but …
  - remember that $V^R = V^D$ in equilibrium
    - no (first-order) loss when some banks switch from repay to default
- Paper shows: the policy always decreases welfare

Takeaway:

- In a setting where default decisions are strategic
  - it is not clear you want to prevent fire sales
- Low asset prices generate good investment opportunities
  - which, in turn, make it more attractive to find a way to stay in business
- Seems like a potentially important point

Expectations crisis

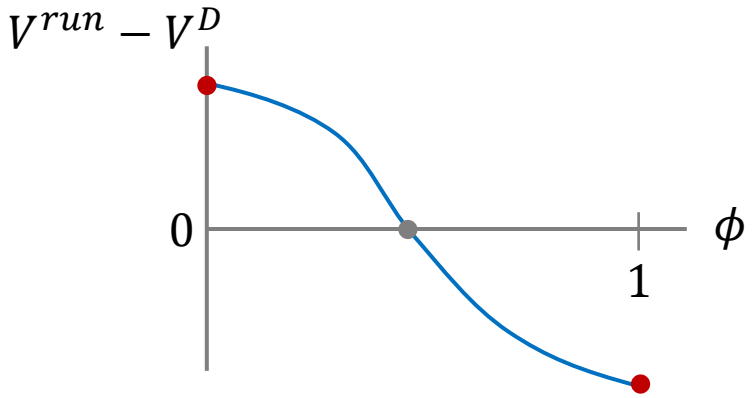
- Introduce self-fulfilling bank runs (a la Cole & Kehoe, 2000)
  - a depositor asks: suppose no one else lends to the bank this period
  - would it still choose to repay today, or default?
- To stay in business, bank must be "run proof": $V^{run} > V^{D}$

$$V_t^{run}(b,k) = \max_{b',k',c} \ln(c) + \beta V_{t+1}^{RP}(0,k')$$

$$c = (\bar{z} + p_t)k - p_t k' - Rb + \cancel{b}^{\,0}$$

- Key change:
  - to repay while facing a run, bank must *sell* capital
  - in fact, sells more capital than a defaulting bank would
  - when p decreases, the incentive to repay $(V^{run} - V^{D})$ now falls

- Repeating: when p decreases, the incentive to repay $(V^{run} - V^{D})$ falls
- Implication: the model moves "closer" to the standard model



- Would seem to open the door to multiplicity

  Q: does it? (If not, why not?)

- Paper emphasizes:
  - a policy that increases asset prices makes *repaying* more attractive
  - decreases the number of defaulting banks
  - since $V^{RP} > V^{D}$, this raises welfare

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1) Interpreting default

- I like the idea that "the future matters"
  - failure is not just a static comparison of assets and liabilities
  - banks have margins on which they can adjust *if* the incentives are right
- But … does the model give banks too much flexibility?
  - firms typically must meet obligations or are put into bankruptcy
- Think of a specific example: Lehman Brothers
  - when was the default decision made? In mid Sept. 2008?
    - did they have a choice at that point?
  - or in the spring/summer of 2008?
    - when it could have raised more equity, but did not like the terms on offer
- To make the case that the mechanisms here are important in practice
  - it would be useful to link the model to some specific case(s)

2) Are these "bank runs"?

- A run occurs here if creditors do not provide *future* funding $(b' = 0)$
  - after losing all of their current deposits
  - liability looks more like fixed-maturity bonds than demandable deposits
- Typically in a bank run, some depositors do withdraw
  - this is how we *identify* a run: unusually high withdrawals
  - here, bank defaults even though no withdrawals have occurred
- Suppose we change the timing:
  - some depositors have ability to withdraw before the bank can act
  - will do so if they expect the bank to default
    - which may depend on whether they expect bank to attract new funds, b'
- Would anything change?

3) The time horizon

- I like the idea that incentives matter for default
  - high return on assets ⇒ stronger incentive to raise equity and continue
- But do we need an ∞-horizon model to capture these effects?
- The model here is rich. Repayment incentive today depends on:
  - entire sequence $\{p_t\}$, which is typically non-stationary
  - future borrowing constraints, which depend on future repayment incentives
- But this also makes the analysis fairly complicated
- Might these same points come through in a 3-period setup?
  - collapse all "future" considerations into a single period
  - might not lose much, since no default occurs in those periods
- Would this work? (If not, why not?)

Conclusion

- An interesting paper!
- Novel approach to bank failure captures something important
  - incentive to remain in business affects bank's choices …
  - … which in turn affect how likely they are to fail
- This point is important for thinking about fire sales and policy
  - low asset prices may create problems meeting obligations
  - but they also generate high profits for banks that survive

Q: How much (and when) do these considerations affect bank actions?