Discussion of:

Collateral Crises

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The views expressed herein are my own and do not necessarily reflect those of the Federal Reserve Bank of New York or the Federal Reserve System.
Overview

- Aim: study the dynamics of credit and output ...
  when information about collateral quality is endogenous

- In normal times, credit tends to grow (a “boom”)

- If collateral quality worsens, credit declines for 2 reasons
  
  (i) the lower value of the collateral (fairly standard)
  
  (ii) lenders have an incentive to produce information (new)

- Fragility builds up during a boom
  
  – contractions in credit/output is larger after a longer boom
Outline

• Relationship to other work
  – what is different about the model/mechanism here?

• Review the key elements of this mechanism

• Comments/questions
Other work

The mechanism here is different from the “standard” feedback effect with collateral constraints

- Standard: focus is on total value of available collateral
  - asset price boom $\rightarrow$ collateral worth more $\rightarrow$ credit boom
  - asset price bust $\rightarrow$ collateral worth less $\rightarrow$ credit crunch
  - as in Kiyotaki & Moore (1997), others

- Here: a crisis can occur even holding the total value of collateral fixed
  - what matters is the *distribution* of collateral (in value terms) across firms
Also different from models that emphasize asymmetric information (Gorton & Pennacchi, 1990; Dang et al., 2010)

- There: concern that asymmetric information will hinder trade/credit
  - achieve better outcomes if counterparties have same information about the value of the asset
  - securities with a relatively state-independent payoff are useful ("information insensitive")

- Here: borrower and lenders have same information about the asset
  - issue is how well everyone can distinguish collateral quality
Key elements
1) Diminishing returns to collateral at the firm level

- Unconstrained efficient level of operation $K^*$
  - if $p_iC > K^*$, excess collateral of firm $i$ is unused

- Suppose a firm’s collateral were known to be good:

  \[
  E[Y|p=1]
  \]

  \[
  C
  \]

  \[
  K^*
  \]

- Concavity $\Rightarrow$ distribution of collateral across firms matters for aggregate efficiency
2) No information production ⇒ collateral values equalize

- Economy begins with $p_iC \in \{0, C\}$ for all $i$

- In each period, some collateral may change quality
  - now $p_iC \in \{0, \hat{p}C, C\}$; mass accumulates over time on $\hat{p}C$

- Concavity ⇒ total lending and total output increase
  - a “credit boom”

- Note: total value of collateral in the economy is not changing
  - the distribution of that value across firms is becoming more equal
3) Information production $\Rightarrow$ collateral values disperse

- Any event that induces lenders to produce information about collateral value will:
  - move firms from $\hat{p}C$ to $\{0, C\}$
  - decrease total credit/output (concavity)

- Firm may borrow less to avoid giving lender this incentive
  - recall: fixed cost of producing information

$\Rightarrow$ Two reasons credit/output may fall

- the possibility of information production tightens constraint
- actual information production creates dispersion in collateral values
Comments
The nature of the aggregate shock

- A fraction \((1 - \eta)\) of good collateral becomes bad
  - total value of collateral in the economy falls, then gradually returns to original level

- Combines the “standard” mechanism and the new one
  - lower total collateral value will constrain credit ...
  - as will the possibility of information production

- Story: suddenly realize some assets are worse than we thought
  - sounds like a plausible description of recent crisis, but ...
• Suppose the shock is a decrease in the probability of success \( (q) \)
  - lenders are more likely to end up holding the collateral
  → also gives lenders an incentive to produce information
  ⇒ can induce a crisis through the same mechanism

• Story also seems plausible
  - always knew some of collateral is questionable, but ...
  - suddenly realize I may actually get stuck with it

• Highlights the mechanism in this model more cleanly
  (average collateral quality is not changing)

• Both types of shocks were present in the recent crisis
  - can the model be used to measure their relative importance?
Evidence for the mechanism

- Does the distribution of collateral across firms matter?
  - if markets work well, answer should be ‘no’
    (but if markets worked well, no need for collateral)

- Paper offers evidence that cross-sectional standard deviation of stock returns falls during periods of credit expansion
  - ok, but ....

- Are there more direct ways to test whether distribution matters?
  - how can I judge the relative importance of the mechanism here?