Managing Credit Booms and Busts

Discussion

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Introduction

- Clear and simple idea. Very well executed:
  - Collateral constraints affect borrowing and smoothing
  - Depend on prices of assets, which are affected by past savings decisions
  - Externality and Pigouvian taxes

- Discussion:
  - Overview of model and main mechanism
  - Nature of borrowing constraints and robustness
  - Normative implications
  - Positive implications and other areas
The mechanics of the model: example

- 2 periods.
- Initial wealth (e.g. endowment) $w$
- tree gives $z$ for sure in period 2.
- $d \leq \phi p$
- $\beta = R = 1$
Region where constraint not binding

- Asset pricing equation:
  \[ u' (w + d) p = u' (z - d) z \]
  
- \( p = z \)
  
- \( c_1 = c_2 \) and \( d = \frac{z - w}{2} \)
  
- when \( w \) decreases, debt increases.
  
- consumption smoothing
When borrowing constraint bind

\[ u'(w + d)p = u'(z - d)z \text{ and } d = \phi p \]

\[ u'(w + d)d = \phi zu'(z - d) \]

- With ln utility

\[ \frac{d}{w + d} = \frac{\phi z}{z - d} \]

\[ d(z - d) = \phi z \left( w + \frac{d}{R} \right) \]
\[ d (z - d) = \phi z \left( w + \frac{d}{R} \right) \]
Nature of Borrowing constraints

- There is no default in the model
- Even without collateral constraints, this implies borrowing constraints
  - debt cannot grow without bound
  - In previous example $d \leq z$
  - In paper, if $y_{min} = 0$, no positive debt can be sustained without default (e.g. $z = 0$)
- Why collateral constraints?
Why collateral constraints?

- **Assumption in paper:**
  - Agents enter period with debt and repay it (cannot default on outstanding debt)
  - Issue new debt
  - Can immediately default on that debt
  - Lose part of the capital
  - and can immediately raise new debt.

- **Existing debt treated asymmetrically**

- **Argument in paper might not work otherwise:**
  - constraints on today’s debt would depend on tomorrow’s expected asset prices, not today’s.
  - tomorrow’s expected prices depend on expected consumption growth after tomorrow.
Normative implications

- Support for a tax on debt
- Not simple: state dependence
- relatively small tax (according to calibration)
- Probably very small welfare gains:
  - calibrated crisis occurs sporadically
  - Not a huge loss in welfare
  - Aggregate vs. distributional risk
- What if more frequent? larger? (e.g. LDC’s)
  - problematic for story: role of precautionary savings
Positive implications

- Parameters chosen to fit the data. Not a positive theory.
- Model is very stylized so hard to match to data.
- Crisis: credit bust and fall in asset price is 12.3%
- This should imply a very large increase in the interest rate on savings
  - Not what happened in the crisis: flight to quality
Potential explanation for LDC’s

Table: Volatility of Annual Growth Rates (1960-99)

<table>
<thead>
<tr>
<th></th>
<th>Industrial Countries</th>
<th>LDC - MFI</th>
<th>LDC - LFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>2.18</td>
<td>3.84</td>
<td>4.67</td>
</tr>
<tr>
<td>C</td>
<td>2.37</td>
<td>5.18</td>
<td>6.61</td>
</tr>
<tr>
<td>Income</td>
<td>2.73</td>
<td>5.44</td>
<td>7.25</td>
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<tr>
<td>C+G</td>
<td>1.86</td>
<td>4.34</td>
<td>6.40</td>
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<tr>
<td>C+G rel. Income</td>
<td>0.67</td>
<td>0.81</td>
<td>0.80</td>
</tr>
</tbody>
</table>
Sector specific assets

- Booms of entry and investment
- Considerable sector specific capital
- Bad news on prospects, decrease value of assets and collateral
- Reduces ability to borrow
- Possible rise in liquidation
- But also reduces the cost of expanding firms.
Final remarks

- Nice and elegant model. Important question.
- Normative or positive?
  - If normative, more meaningful if could get larger effects
  - If positive, expand model and explore other implications
- Aggregate or sectoral?