Policymaking under Uncertainty: Perspective and Culture

Stephen G Cecchetti

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Outline

- Perspective
  - Credit and Crises
  - Regulation
- Culture
Robust policymaker who is uncertain about Loan Growth $\Rightarrow$ Probability of Crisis
Will be more aggressive:

If L goes from 20% to 50% (real Loan growth 3.7% a.r to 8.5% a.r.) the policy rate goes from up about 10 bps.

Note: There is a now a consensus that interest rates should react to asset prices.
What does uncertainty do?

**Gradualism:**
Walking along the edge cliff at night: be cautious!

**Robustness:**
See a small fire burning in the kitchen: be aggressive!
Relating the probability of crisis to debt:

\[ \gamma = \frac{\exp(h_0 + h_1L)}{1 + \exp(h_0 + h_1L)} \]

- \( \gamma \) is the probability of crisis
- \( L \) is the growth rate of real bank lending over 5 years
- Parameterization implies:
  - \( \Delta L \) from 20\% to 30\% (+10pp)
  - \( \gamma \) from 4.9\% to 5.6\% (+1pp)
Questions

1. Are the estimated probabilities realistic?

2. Is this an important source of uncertainty?
### Impact of Uncertainty

<table>
<thead>
<tr>
<th>Sensitivity of Crisis Probability to Credit</th>
<th>5yr Growth in Real Bank Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20%</td>
</tr>
<tr>
<td>Low</td>
<td>3.74%</td>
</tr>
<tr>
<td>Baseline</td>
<td>4.65%</td>
</tr>
<tr>
<td>High</td>
<td>5.78%</td>
</tr>
</tbody>
</table>

Source: Ajello et al, equation (4) using parameters from Table 3.

If L=0, then prob = 3.24%
Table A1: Crisis Dates by Country, 1870–2008

<table>
<thead>
<tr>
<th>Country</th>
<th>Sample</th>
<th>Number of Crises</th>
<th>Number of Observations</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1870 to 2008</td>
<td>79</td>
<td>1932</td>
<td>4.09%</td>
</tr>
<tr>
<td></td>
<td>1870 to 1914</td>
<td>38</td>
<td>616</td>
<td>6.17%</td>
</tr>
<tr>
<td></td>
<td>1914 to 1945</td>
<td>31</td>
<td>448</td>
<td>6.92%</td>
</tr>
<tr>
<td></td>
<td>1945 to 2007</td>
<td>10</td>
<td>868</td>
<td>1.15%</td>
</tr>
<tr>
<td></td>
<td>1945 to 2008</td>
<td>18</td>
<td>882</td>
<td>2.04%</td>
</tr>
</tbody>
</table>

Source: Schularick and Taylor (2012).
Questions

1. Are the estimated probabilities realistic?

   Estimates rely on pre-WWII data.
Uncertainty with recalibration

Baseline probability of crisis falls from 4.65% to 1.94%.

Sensitivity falls by more than half.

(If $L=0$, then prob = 3.24% and 1.34% respectively.)

Impact of Uncertainty

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</table>

Source: Ajello et al, equation (4) using parameters from Table 3.
1. Are the estimated probabilities realistic?

Estimates rely on pre-WWII data. Calibration closer to post-WWII is less dramatic.

Key result will still hold, but smaller.
(Smaller than the baseline +10bps when L went from 20% to 50%.)

An aside: What happens when real bank lending is falling?
Questions

1. Are the estimated probabilities realistic?

2. Is this a important source of uncertainty?
Important sources of uncertainty

- The neutral real interest rate
- Potential growth
Exhibit 5.3. Forecasts for U.S. and long-run world real rates implied by (5.4) and (5.5) along with 90% confidence intervals for the latter.

Selected Vintages of U.S. Real Potential GDP

Source: CBO, Federal Reserve Bank of St. Louis (ALFRED).
Questions

1. Are the estimated probabilities realistic?

   Key result will still hold, but smaller.
   (Smaller than +10bps for the case when L went from 20% to 50%.)

2. Is this a important source of uncertainty?

   The neutral real rate and potential output appear to be bigger problems.
   Uncertainty is in likely 10 to 20 times bigger.
Regulation and Financial Crises

- Improved capital and liquidity regulation
  - Reduce leverage
  - Reduce liquidity mismatch
  - Reduce maturity mismatch
  - Reduce currency mismatch

- Central clearing
  - Reduce gross exposures
  - Reduce concentrations
  - Reduce interconnections
  - Impose consistent margining practices
<table>
<thead>
<tr>
<th>TCE/RWA</th>
<th>All models</th>
<th>Models unable to assess changes in liquid assets</th>
<th>Models incorporating changes in liquid assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>7.2</td>
<td>8.7</td>
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<td>7</td>
<td>4.6</td>
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<td>0.4</td>
<td>0.4</td>
<td>0.5</td>
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<tr>
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<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td># models</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Meeting the NSFR is modeled as a 12.5% increase in the ratio of liquid assets over total assets. 2 The NSFR equals 1.12 if liquid assets increase by 50% for the average bank.

Prudential tools look like the right tool.

Just because you are worried you might see a fire, you shouldn’t go around making everything wet.

What is the role for interest rate policy?
The culture of policymaking

- Why are Americans more optimistic than Europeans?
- The American approach to risk management.
The culture of policymaking

- Why are Americans more optimistic than Europeans?
- The American approach to risk management: tame your nightmares.
- What would the European kid have done?
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