Discussion of Maintaining Central-Bank Solvency under New-Style Central Banking
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The questions

When interest rates eventually rise...

• Will capital losses and interest on reserves imperil Fed solvency?

• Will the Fed’s ability to conduct monetary policy interest rates be compromised?

• Will the Fed continue to make payments to the Treasury?
The questions

When interest rates eventually rise...

- Will capital losses and interest on reserves imperil Fed solvency?  
  No
- Will the Fed’s ability to conduct monetary policy interest rates be compromised?  
  No
- Will the Fed continue to make payments to the Treasury?  
  Maybe
What do they do?

Essentially an exercise in accounting.

Begin with the evolution equation for real reserves

\[ V_{t+1} = (1 + r_t)V_t + q_{t+1}(B_{t+1} - (1 - \delta)B_t) - c_tB_t - n_{t+1} + d_{t+1} \]

- First part of the paper discusses the stationarity of \( V \)
- Second part simulates exit from the LSAP program by making assumptions on the evolution of these
- Particular attention to various rules for \( d \) and whether ever turns negative
What do they do?

Other papers perform similar exercises

• Carpenter, Ihrig, Klee, Boote, Quinn (Jan 2013)
• Greenlaw, Hamilton, Hooper, Miskin (Feb 2013)

The three papers differ in the assumptions placed on the evolution of prices and the Fed balance sheet.
What do they do?

Model real interest rate as a five state Markov chain.

- Four states associated with quartiles of ex post real one-year t-bill rates over the post-war/pre-crisis period
  - Uses observed transitions to calibrate transition matrix

- Fifth state = crisis
  - Begins in 2009
  - Assume 7% chance of entering crisis from high rate state
  - 20% chance of leaving crisis and entering mid-low rate state
What do they do?
What do they do?

• For each state calculate average
  – Safe rate
  – Fed bond holdings
  – Currency outstanding

• Use Markov model to price bonds
  – Use markov chain and real rates to back out stochastic discount factor
  – Choose delta to match maturity distribution of Fed debt holdings
  – Set $c = 1$

• Dividends set according to nominal mark to market rule
  – Theorem that this leads to asymptotically stationary reserve process
What do they do?

Figure 4: Flows Into and Out of Reserves
What do they do?
# Comparison

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<th>CIKBQ/GHHM</th>
<th>HR</th>
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<td><strong>Bond holdings</strong></td>
<td>Match actual holdings of Treasury debt and agency MBS</td>
<td>Single Calvo bond</td>
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<td><strong>Bond prices</strong></td>
<td>Impute yield curve from Blue Chip forecasts of long and short rates</td>
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<td><strong>Asset purchases</strong></td>
<td>Quantify Fed intentions regarding purchases and sales from policy statements; Private sector prepayment model for mortgages</td>
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<td><strong>Remittances</strong></td>
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Additional comments

• Do not exploit the full potential of their model.
• Lots of potential endogeneity among components of model
  – Asset sales affect interest rates
  – Monetary policy affects output and inflation
  – Seignorage responds to inflationary expectations
  – Abstract from effects of policy on growth economic growth
• Only a part of the fiscal impact of the fed
  – Effect of interest rates on debt payments
  – Effect of growth on taxes
What about the private sector?

More important question might be how rise in interest rates affect private sector.

- Begenau, Piazzesi, and Schneider