Discussion of "On the merits of conventional vs. unconventional fiscal policy" by Matthieu Lemoine and Jesper Linde

Ansgar Rannenberg

1National Bank of Belgium

Annual Workshop ESCB Research Cluster 2, 07-09/11/2018
Outline

1. **Summary of the paper**

2. **Comments**
What the paper does

• How can fiscal policy stimulate economy if monetary policy constrained by ZLB?

• Compares stimulative effect of
  • “Unconventional fiscal policy” (UFP): anticipated gradual and near permanent sales tax increase (Correia et al. (2013).
  • “Conventional fiscal policy”: Temporary increase in government investment.

• Models:
  • Simple NK model with distortionary taxation.
  • “Full” model with both sticky price and wages, Rule Of Thumb households, private investment and financial accelerator as in Bernanke et al. (1999).

<table>
<thead>
<tr>
<th>Non-aggr fiscal rule for $\tau_{N,t}$</th>
<th>BB rule $\tau_{N,t} \downarrow$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylized NK model</td>
<td>Unconventional and Conventional fiscal policy work</td>
</tr>
<tr>
<td>Full model</td>
<td>Only Conventional Fiscal Policy works</td>
</tr>
</tbody>
</table>

• Full model: also rules with $\tau_{K,t}$
“Direct” UFP channel: Present in both models and fiscal rules

- **Gradual** increase of consumption tax rate:

\[
AD: \ c_t = E_t \left\{ - \left( \begin{array}{c} i_t - \pi_{t+1} \\ \frac{1}{1+\tau_C} (\Lambda \tau_{C,t+1}) + c_{t+1} \end{array} \right) \right\} . \quad \text{Sequence of positive } \Lambda \tau_{C,t+1} \Rightarrow \uparrow c_t \text{ (similar to lower real interest rate).}
\]
### “Indirect” UFP channels

**AS in stylized model:**

\[
\pi_t = \beta \pi_{t+1} + \kappa mc \left[ \phi mc \pi_{t+1} + \frac{1}{1-\tau_N} \left( \tau_N - \tau^{pot}_{N,t} \right) \right].
\]

\[
y_{t}^{pot} = \frac{1}{\phi mc} [g_y, (1-g_y) \nu_c] - \frac{\sigma}{1-\tau_N} \tau^{pot}_{N,t} - \frac{\sigma}{1+\tau_C} \tau_{C,t}.
\]

<table>
<thead>
<tr>
<th></th>
<th>Non-aggr fiscal rule: ( \approx ) only ( \tau_{C,t} \uparrow )</th>
<th>BB rule ( \tau_{N,t} \downarrow )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>stylized model</strong></td>
<td>( y_{t}^{pot} \downarrow \Rightarrow E_t \pi_{t+1} \uparrow \Rightarrow (i_t - \pi_{t+1}) \downarrow \Rightarrow y_t \uparrow ) Permanent income ( \downarrow \Rightarrow y_t \downarrow )</td>
<td>( y_{t}^{pot} \uparrow \Rightarrow E_t \pi_{t+1} \downarrow \Rightarrow (i_t - \pi_{t+1}) \uparrow \Rightarrow y_t \downarrow ) Permanent income ( \uparrow \Rightarrow y_t \uparrow )</td>
</tr>
<tr>
<td><strong>sticky wages/habits</strong></td>
<td>( y_{t}^{pot} \downarrow \Rightarrow ) Permanent income ( \downarrow \Rightarrow y_t \downarrow )</td>
<td>( y_{t}^{pot} \uparrow \Rightarrow ) Permanent income ( \uparrow \Rightarrow y_t \uparrow )</td>
</tr>
<tr>
<td><strong>Investment</strong></td>
<td>( y_{t}^{pot} \downarrow \Rightarrow K_t \downarrow \Rightarrow I_t \downarrow )</td>
<td>( y_{t}^{pot} \uparrow \Rightarrow K \uparrow \Rightarrow I_t \uparrow )</td>
</tr>
</tbody>
</table>
Public investment increase during ZLB

- Increases output directly.
- Crowds in consumption and private investment.
  - Increases inflation and lowers real interest rate during ZLB.
  - Higher public capital $\Rightarrow$ Lower marginal cost and inflation after exit from ZLB, hence lower real interest rate trajectory. Benign timing of marginal cost decline due to “time to build” effect:

$$I_{G,t} = \frac{1}{6} (G_{I,t-4} + G_{I,t-8} + G_{I,t-12} + G'_{I,t-16} + G'_{I,t-20} + G'_{I,t-24})$$

- Expansionary effect robust:
  - to aggressiveness of fiscal rule.
  - to move from stylized to full model.
Paper addresses important policy question:
- EA economy at ZLB since end of 2012.
- High public debt renders “unconventional” fiscal policy attractive.

Main contribution: Public investment more robustly stimulative due to smaller requirements on political process.

Exposition:
- Provide more intuition on interaction between model features and two fiscal rules.
- Show separately role of private investment, ROT households and financial accelerator.
- Could some features be dropped without changing results (FA? Indexing wages/ prices?).
- Is there a role for endogenous changes in ZLB length?
Public investment self-financing during ZLB.

Check: Does the semi-elasticity of the budget balance w.r.t. output gap implied by model correspond to empirical evidence? About 0.5 for OECD countries/ US (e.g. Price et al. (2015)).

Full model simulation: Probably close (since GDP increases by 2% for 1% increase in public investment).

…but authors could check by simulating data using a wide range of shocks, then regress budget balance on output gap.
Results with aggressive capital tax rule

- UFP especially expansionary in this scenario: Even ROT households benefit due to higher wages and employment!
- Consumption tax increase buys huge decline in capital tax rate:

  ![Capital Income Tax (P.P.)](chart)

- Simulation with markup of 1.25, capital rental and profits taxed:
  - Capital tax rate decline much smaller.
  - GDP effect reduced to fraction of baseline value.
  - Effect on ROT households unambiguously negative.