Interest Rates and Inflation
Fernando Alvarez, Robert E. Lucas, Jr and Warren E. Weber
Discussion by
Lars E.O. Svensson
www.iies.su.se/leosven

- Current monetary-policy instrument: Short interest rate, $r_t$
  - Interest rate increase: $r_t \uparrow \rightarrow \pi_{t+1} \downarrow$
  - Reject quantity theory?
  - Quantity theory?
    * “Loose” QT: Long-run correlation between $M_t$ and $P_t$
    * Control money growth, $\mu_t \equiv \frac{M_t - M_{t-1}}{M_{t-1}}$
      in order to control inflation, $\pi_t \equiv \frac{P_t - P_{t-1}}{P_{t-1}}$

- Can money be an instrument?
  
<table>
<thead>
<tr>
<th>Variable</th>
<th>Control</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument</td>
<td>Perfect</td>
<td>Nonborrowed reserves</td>
</tr>
<tr>
<td>Operating target</td>
<td>Almost perfect</td>
<td>FF rate, monetary base</td>
</tr>
<tr>
<td>Intermediate target</td>
<td>Imperfect</td>
<td>M1, M2, M3</td>
</tr>
<tr>
<td>Target</td>
<td>Imperfect</td>
<td>Inflation, output gap</td>
</tr>
</tbody>
</table>

- Control (broad) money growth: Monetary targeting
  Intertemporal loss function
  $$ E_t \sum_{\tau=0}^{\infty} \delta^\tau (\mu_{t+\tau} - \mu^*)^2 $$
  Instrument, $r_t \rightarrow$ Intermediate target, $\mu_{t+1} \rightarrow$ Target, $\pi_{t+2}$
  - Monetary targeting is inefficient, since money growth is not the only predictor of future inflation

- Conventional (neokynesian) wisdom of the transmission mechanism and role of money (CGG JEL, Svensson JME, Woodford)
  $r_t \uparrow$, sticky prices $\rightarrow r r_t \uparrow$, AD $\rightarrow y_{t+1} - \bar{y}_{t+1} \downarrow$, AS $\rightarrow \pi_{t+1} \downarrow$
  - Money, prices endogenous variables
  - Demand for real money
  - Money and prices correlated, consistent with loose quantity theory
  - Causality money-prices depends

- What is the problem?
  - Exogenous velocity ($v_t$ exogenous), strict quantity theory
    $$ P_t y = M_t \frac{1}{1 - v_t} $$
    $$ \pi_t = \frac{1 - v_t}{1 - v_t} (1 + \mu_t) - 1 $$
    - By construction, controlling $\mu_t$ is best way to control $\pi_t$
    - Price nominal bonds
      $$ r_t = -\log \left[ E_t [\exp[-\phi(\mu_{t+1} - \mu_t)]] \frac{1}{1 + \mu_{t+1}} \frac{1 - v_{t+1}}{1 - v_t} \right] $$
    - Alternative transmission mechanism
      $$ \mu_t \uparrow \rightarrow \pi_t \uparrow \rightarrow \frac{\partial r_t}{\partial \mu_t} \downarrow $$
    - Which model is most realistic? Strict quantity theory rejected
Sum up
- Broad money cannot be an instrument
- Monetary targeting is inefficient
- There is no or little problem with the conventional neokeynesian wisdom
  * Consistent with the loose quantity theory
- The present paper makes money crucial in the transmission mechanism by construction, strict quantity theory
- Model not convincing
  * Broad or narrow money?
  * Strict quantity theory rejected