"Discussion of Monetary policy for a bubbly world ", presented by Vladimir Asriyan

Xavier Ragot

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This paper

- Both simple and very complex model.
- Build on the literature on previous model of rational bubbles (Martin and Ventura 2011, 2012).
- Promising paper in this literature, still very preliminary.
- I will discuss monetary part of the model.
Basic idea to undo Tirole (1985): rational bubble only in dynamically inefficient environment: $r < g$.

Two types of agents:
- Savers: low return on investment
- Entrepreneurs: a high return on investment, but credit constrained. Use bubble as collateral.

Bubble priced by savers, issued by entrepreneurs, can be a way to redistribute wealth to entrepreneurs, but stochastic component.
Model: Entrepreneurs

Live for 2-periods

\[ U = \max \left( EC_{2t+1}^i \right) \]

Constraint

\[(1 - \tau) w_t + F_t^i = \sum_j B_{t+1}^{ij} + K_t^i + \frac{M_t^i}{p_t} \]

\[ C_{2t+1}^i = (1 + r_{t+1} - \delta) K_{t+1}^i + \sum_j R_{t+1}^j B_{t+1}^{ij} + \frac{M_t^i}{p_{t+1}} - R_{t+1} F_t^i \]

\[ R_{t+1}^i F_t^i \leq \sum_j R_{t+1}^j B_{t+1}^{ij} \]

Can issue bubble

\[ B_{t+1}^{ij} = B_t^{ij} + N_{t+1}^{ij} \]
Model: Savers

Live for 2-periods

\[ U = \max \left( \frac{(C_{1t})^{1-1/\theta} - 1}{1 - 1/\theta} + \beta \frac{(EC_{2t+1})^{1-1/\theta} - 1}{1 - 1/\theta} \right) \]

Constraint

\[ C_{1t} = (1 - \tau) w_t - F_t - \frac{M_t}{p_t} \]

\[ C_{2t} = R_t F_t + \frac{M_t}{p_{t+1}} \]

- Demand for bubbly asset comes from entrepreneurs
- Savers don’t have access to the (high return) technology
Money demand?

Here totally ad hoc: agents must hold a arbitrarily small quantity of money $\frac{M}{P}$

Just to say that the central bank can control the price level by money creation.
Bubble

Martin and Ventura (2012)
Bubble can have a positive price if

\[ ER_{t+1}^j = R_{t+1} \]

but stochastic component of \( N_t \): new bubble issued
Here budget of the state

\[ G_t = \tau w_t + \frac{M_t - M_{t-1}}{p_t} \]
Here: nominal and real bubble

Nominal bubble: claim of nominal income, affected by inflation shock

\[ E \frac{R_{t+1}^N}{1 + \pi_{t+1}} = R_{t+1} \]

**Basic idea:** monetary policy shock affect nominal bubble: Real effect on the accumulation of assets, through credit constraint.

\[
\begin{align*}
\quad b_{t+1}^R &= R_{t+1} b_t^R + n_t^R \\
\quad b_{t+1}^N &= R_{t+1} b_t^N (1 + E \pi_{t+1} - \pi_{t+1}) + n_t^N
\end{align*}
\]

In words, monetary policy shock affect the stock of nominal assets used a collateral.
Question

- What is a real and nominal bubble? Bond, stock, building?
  - If bonds: market structure of the firm (choice variable) affect the collateral constraint.
  - Assets valuation affected by inflation risk: empirical assessment?
- Expected monetary policy has no effect?
  - Monetary complete market for the inflation risk.
  - Improve inefficient market allocation
  - Problem money creation generates wealth effect.
  - What about an optimal management of real bubble (public debt)? (Martin Ventura 2012)
- Quantitative effects hard to assess at this stage.
- Interesting dynamics when interaction with other nominal frictions (prices set one period in advance...)
- No redistributive effect of monetary policy: For instance loan $F_t$ in nominal terms
- Heterogeneous money demand)
- Why introduce default $\omega$ in the bubbly episode?