Unique Monetary Equilibria with Interest Rate Rules

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Goal of this paper

- Unique monetary equilibrium with an interest rate rule

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- Unlike most of the literature, not a unique *local* equilibrium, but simply a unique equilibrium.

Main contribution

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- Show how the rule works in a stripped-down cash-in-advance model with flexible prices

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- Show how it works in two extensions:
  - frictionless capital accumulation by households
  - prices set in advance (effective for one period)

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  - Alternatives

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  - forward-looking price-setting (Calvo or menu costs)

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  - inflation is a forward-looking variable in this case. So even if the rule pins down mc_t uniquely, this does not pin down π_t.
- In general, only by chance could the proposed rule exactly cancel out *all* expectation terms from a richer model with more forward-looking equations

A slightly different approach

- Loisel's (*JET*, *forthcoming*) proposal

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\begin{aligned}
i_t &= r + E_t \pi_{t+1} + \phi \left(\pi_t - \xi_t \right) \\
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- Advantage: the rule works even if the central bank has imperfect knowledge of some structural parameters

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i_t &= r + \phi E_t p_{t+1} - \xi_t; \qquad \phi \to 1 \\
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- For any $\phi \to 1$ $(\phi < 1)$ there is a continuum of explosive solutions:

$$\begin{aligned} p_{t+1} &= \frac{1}{1-\phi} p_t - \frac{1}{1-\phi} \xi_t + \delta_{t+1}; \qquad E_t \left(\delta_{t+1} \right) = 0 \\ p_t &= \left(\frac{1}{1-\phi} \right)^t p_0 - \sum_{j=1}^{t} \left(\frac{1}{1-\phi} \right)^{j-1} \xi_{t-j} + \sum_{j=0}^{t-1} \left(\frac{1}{1-\phi} \right)^j \delta_{t-j} \end{aligned}$$

The Fed threatens an explosive path of inflation. For $\phi = 1$ the explosion is instantaneous

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- A threat can in principle be credible even if it sounds crazy: game of chicken. What is a real-life counterpart of "throwing out the wheel"?
- Or suppose that the Fed is going to be worse-off not acting on it. But what could be worse for the Fed than explosive inflation or deflation?

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  - McCallum: "learnability" as a refinement
  - Cochrane: fiscal theory of the price level

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- Again, is this credible? One might conjecture that long before the Fed has managed to implement such a confiscation of nominal wealth, people would switch to alternative money, e.g. gold or cigarettes.

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- Even less confortable to those who feel uneasy with a description of expectations that reflects incredible threats by the Fed
- More research on this important topic is needed