Monetary Independence and Rollover Crises
by
Bianchi and Mondragon

Discussion by Sushant Acharya

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Question

Does a fixed exchange rate expose a country to greater risk of a rollover crisis?

Environment

- SOE - rep HH (supply labor inelastically $h \leq \overline{h}$):

$$\max \mathbb{E}_0 \sum_{t=0}^{\infty} U\left(\left[\omega (C_t^T)^{-\mu} + (1-\omega)(C_t^N)^{-\mu}\right]^{-\frac{1}{\mu}} \right)$$

s.t.

$$e_t C_t^T + P_t^N C_t^N = e_t y_t^T + \Pi_t^N - T_t \qquad \text{and} \qquad y_t^T \text{ is stochastic}$$

- Non-tradable production

$$\Pi_t^N = \max_h P_t^N F(h) - \overline{W} h$$

- Nominal Wage rigidity

$$h_t \leq \overline{h} \qquad , \qquad W_t \geq \overline{W} \qquad \text{and} \qquad (h-\overline{h})(W_t - \overline{W}) = 0$$

- Government saves/borrows from risk-neutral ROW - transfers/taxes HH

Environment

- Full insurance - C_t^T, C_t^N constant, $h = \overline{h}$ for all t
  - Requires commitment from gov't to raise taxes in order to repay lenders
- Without commitment, possibility that country can default
  - For moderate levels of debt, possibility of Cole-Kehoe roll-over risk
  - If lenders are pessimistic about repayment prospects, refuse to lend
  - Country cannot rollver debt by borrowing. choices:
    - default - exclusion from financial markets
    - don't default - raise taxes, lower consumption
  - If default relatively less costly - pessimism is self-fulfilling

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- MP autonomy
  - yes - less severe recessions, defaulting relatively less attractive
  - no - more severe recessions, defaulting relatively more attractive
- Bigger recessions make defaulting more attractive
  - lenders' pessimism about repayment becomes self-fulfilling

Why does a lack of monetary autonomy make recessions more severe?

Key Equations

Key Equations:

- Demand for non-tradable consumption

$$\frac{P^N}{e} = \frac{1-\omega}{\omega}\left(\frac{C^T}{F(h)}\right)^{1+\mu} \qquad \text{where} \qquad eC^N = ey^N + \overline{W}h - T$$

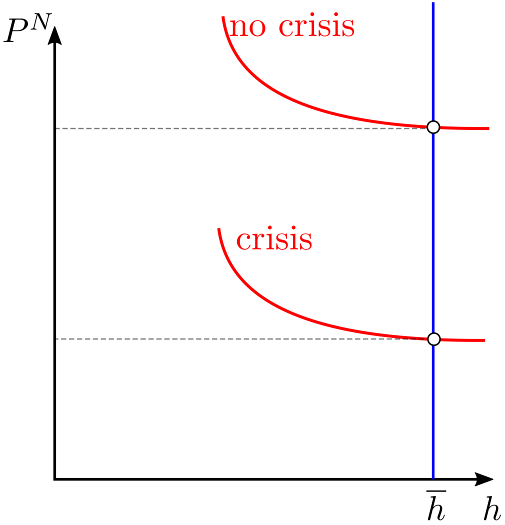
- Supply of non-tradable consumption

$$F'(h) = \frac{\overline{W}}{P^N} \qquad , \qquad h \leq \overline{h}$$

- In roll-over crisis, $T \uparrow \Rightarrow$ hh's poorer and reduce demand for consumption

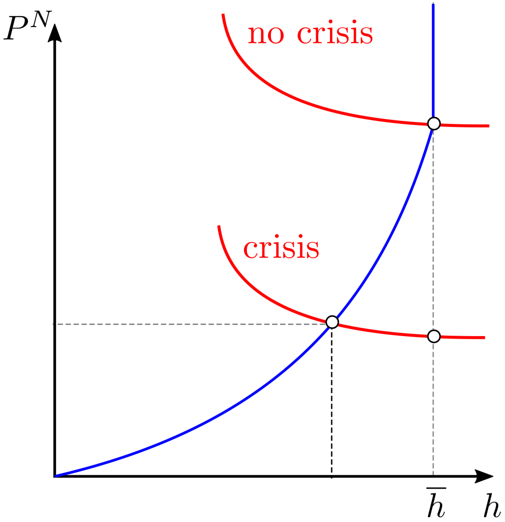
Flexible nominal wages

- W adjusts ensuring $h = \overline{h}$ for any P^N
- Given e and C^T, P^N adjusts ensuring $C^N = F(\overline{h})$



Fixed nominal wages

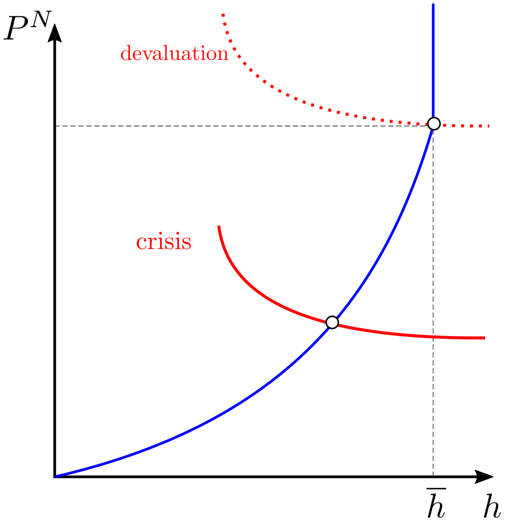
- P^N plays a dual role:
- Given e and C^T, lower $P^N \Rightarrow \uparrow$ demand for non-tradable
- Given $\overline{W}$, higher $P^N \Rightarrow \uparrow$ supply of non-tradable



Exchange rate devaluation

- With monetary autonomy, could devalue
- Lower $P^N/e \Rightarrow \uparrow$ demand for non-tradable without $P^N \downarrow$
  - Large enough devaluation eliminates need for lower P^N
- Monetary autonomy eliminates $h < \overline{h}$ (less severe recession)

$$\frac{P^N}{\tilde{e}} = \frac{1-\omega}{\omega}\left(\frac{C^T}{F(\overline{h})}\right)^{1+\mu}, \tilde{e} > e$$



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- SOE also commits to not use "*fiscal-devaluation*" Farhi et. al. (2014)
  - consumption taxes on tradable can mimic role played by devaluation of exchange rate
  - such a policy: time-consistent, eliminates additional roll-over risk

$$\frac{P^N}{(1+\tau)e} = \frac{1-\omega}{\omega}\left(\frac{C^T}{F(\bar{h})}\right)^{1+\mu}$$

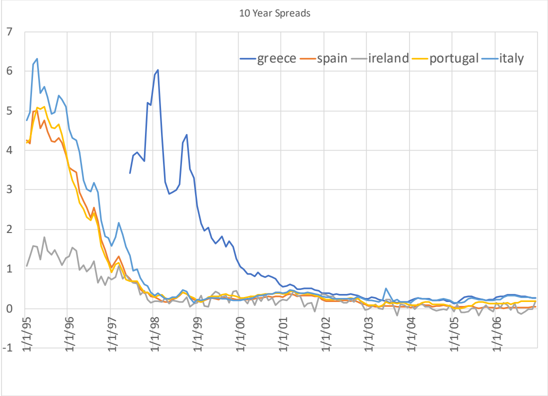
  - why can't govt. commit to this time consistent policy?

Is roll-over risk a big concern in a currency union ?

- Policy instruments available to centralized monetary authorities which can reduce/ eliminate roll-over risk
  - Outright Monetary Transactions (OMT) - ECB makes outright purchases in secondary, sovereign bond markets.
  - Commitment by ECB to always step in in event of roll-over risk and lend to country at “optimistic” rates eliminate bad equilibrium.
  - may not even have to intervene on equilibrium

Is roll-over risk a big concern in a currency union ?

- PIIGS saw a decline in spreads when they adopted Euro
  - model predicts lending rates should weakly increase?
  - maybe decline in lending rates accounted for by inability to inflate away debt



Great paper! Very clear and well written.