

Interactions between Monetary and Fiscal Policy: Discussion

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Introduction

- Monetary-fiscal policy interactions can arise in many ways:
 - distortionary fiscal instruments,
 - political economy reasons, etc.
- I focus on theoretical underpinnings of monetary-fiscal interactions (I ignore preceding additional reasons).

- A simple MIU model for fiscal theory of prices. Some key equations:
 - Consumer budget constraint

$$c_s + m_s + b_s + \tau_s = y + m_{s-1}\pi_s^{-1} + R_{s-1}\pi_s^{-1}b_{s-1},$$

where $b_s = B_s/P_s$, $m_s = M_s/P_s$, $\pi_s = P_s/P_{s-1}$. B_s end-of-period nominal stock of bonds, R_{s-1} is the nominal gross interest rate, a constant endowment y .

- The Fisher equation

$$R_t^{-1} = \beta E_t^* \pi_{t+1}^{-1}.$$

- Money market equilibrium,

$$\mathcal{A}\beta m_t^{-\sigma_2} E_t^* \pi_{t+1}^{\sigma_2-1} = (y - g)^{-\sigma_1} (1 - \beta E_t^* \pi_{t+1}^{-1}),$$

where g is government purchases.

- The government budget constraint

$$B_t + M_t + \tau_t P_t = gP_t + M_{t-1} + R_{t-1}B_{t-1}.$$

- Leeper's tax rule

$$\tau_t = \gamma_0 + \gamma b_{t-1} + \psi_t.$$

- Interest rate rule

$$R_t - 1 = f(\pi_t)\theta_t, \text{ where}$$
$$f(\pi) = (R^* - 1) \left(\frac{\pi}{\pi^*} \right)^{AR^*/(R^* - 1)}$$

- Recent experience suggests that the effective lower bound (ELB) on interest rates may generate a “liquidity trap”. I look at the possible REE in ELB situation.

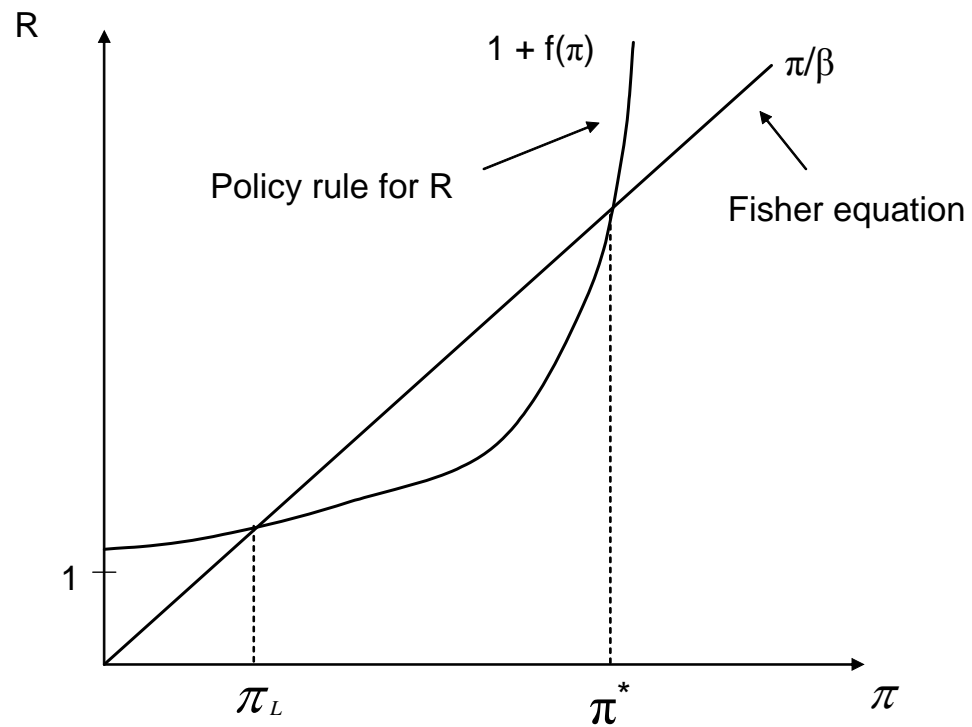


Figure 1: Multiple steady states (Benhabib, Schmitt-Grohe and Uribe, JET 2001)

- If fiscal policy is **passive (Ricardian)**, i.e. $\beta^{-1} - 1 < \gamma$, there are two non-explosive REE involving a stochastic steady state for inflation:

$$\pi_t = \pi + shock$$

and consequent dynamics for bonds.

Determinacy and learning stability:

- π^* is locally determinate and locally stable under (steady-state and VAR) learning.
- π_L is indeterminate but is not stable under (steady-state or VAR) learning.

Note: Learning means that agents face policy uncertainty.

- These results also hold in a standard New Keynesian model.

- Under passive fiscal policy the preceding REE are "monetarist" i.e. bonds evolve independently.
- If fiscal policy is **active (non-Ricardian)**, i.e. $\beta^{-1} - 1 > \gamma$, there are non-explosive REE near π_L that are locally a VAR and satisfy

$$\pi_t = \frac{\alpha\beta\varphi_1 + \varphi_2}{\beta^{-1} - \gamma - \alpha\beta} b_t + K_2\theta_t.$$

These REE are fiscalist and are locally stable under VAR learning.

- **Note:** In fiscalist equilibria dynamics have bond-inflation interactions.

- **Problem:** In flexible-price models, the domain of learning stability of the fiscalist REE is very small. (Evans and Honkapohja 2005)

Conjecture: The same is true for sticky-price models.

Interpretation: Fiscal dominance regime may well be fragile.

- This analysis does not allow for Davig-Leeper type policy switches (where learnability is an open issue).

- The preceding results hold if agents have short-horizon decision rules under learning.
- If agents have long-horizon decision rules, further issues arise.
 1. Eusepi and Preston (2010): **policy communication** affects the preceding determinacy and learning-stability conditions.

2. **Ricardian Equivalence under learning** (RIEL) may or may not hold (Evans, Honkapohja and Mitra 2010).

● Assume:

- Agents believe that government intertemporal budget constraint at their expected prices is satisfied.
- Consumers combine their and government intertemporal budget constraints, then (with log utility) the agents have consumption function

$$c_t = (1 - \beta) \left(y_t - g_t + \sum_{j=1}^{\infty} (D_{t,t+j}^e)^{-1} (y_{t+j}^e - g_{t+j}^e) \right),$$

where $D_{t,t+j}^e = \prod_{i=1}^j R_{t+i-1}^e / \pi_{t+j}^e$.

- Fiscal influences come through g_t , g_{t+j}^e , not via government financing.

- In this case the **consumer is Ricardian**. This is distinct from **paths of the economy being Ricardian**.

- The preceding results about monetarist and fiscalist equilibria can be worked out with Ricardian consumers.
Comments:
 - RIEL fails along learning paths if agents' forecast functions depend on government financing variables.
 - The learnable equilibrium may be Ricardian or non-Ricardian.

- **Conjecture**: a small stability domain for fiscalist REE near π_L also holds with Ricardian consumers.

- Nature of monetary-fiscal interactions depends on:
 1. Consumers are Ricardian, but government financing variables influence agents' expectations.
 - RIEL fails along learning paths toward monetarist REE, but the REE is Ricardian.
 - Passive monetary policy near ELB and active fiscal policy may or may not lead to non-convergent learning paths.
 2. Consumers are not Ricardian.
 - Government bonds have wealth effects along learning paths. The economy converges to ... (work in progress).