Macroeconomic Stabilization via Fiscal Policy?

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Goal of Slides/Talk

- I pose a question about fiscal policy.

- I illustrate the question through a simple example model.

  – "Fragility ..." paper illustrates question more generally.

- Goal: Broad dialog among conference participants about question.

Basic Question

- Suppose mon. pol. is passive (as near effective lower bound).

- Issue: current outcomes are highly sensitive to shocks to expectations about LR.

  - Purely real models ignore this issue.

  - BUT: sensitivity is nearly infinite for models in which prices are nearly fully flexible.

- **Question: How can fiscal policy eliminate this kind of instability**?

Illustration: Simple NK Model

- Consider the following New Keynesian model.

- Same as standard except:

  - "inflexible" firms set prices equal to last period price level.

  - the resulting NK Phillips curve is myopic

  - finite (T) period economy.

Exogenous Parameters

- σ^{-1} is the elasticity of intertemp. sub.

- $\kappa \in [0, \infty)$ indexes fraction of flexible firms.

  - 0 is fixed prices and ∞ is flexible prices.

- r^{nat} is the (constant) natural real interest rate

- $(\alpha, \beta) > 0$ are Taylor Rule intercept and slope

Endogenous Variables

- Three endogenous stochastic processes:

    - $\{y_t\}_{t=1}^T$ is (logged) output gap

    - $\{\pi_t\}_{t=1}^T$ is the inflation rate

    - $\{i_t\}_{t=1}^T$ is the nominal interest rate

Equilibrium Definition

- An equilibrium is a triple of stochastic processes $\{y_t, \pi_t, i_t\}_{t=1}^{T}$ such that:

$$y_t = E_t y_{t+1} - \sigma^{-1}(i_t - r^{nat} - E_t \pi_{t+1}), t = 1, ..., T-1$$
$$\pi_t = \kappa y_t, t = 1, ..., T$$
$$i_t = \alpha + \beta \pi_t, t = 1, ..., T$$

Characterization of Equilibrium Set

- Set of equilibria can be characterized as:

$$y_t = \frac{(r^{nat} - \alpha)}{(\beta - 1)\kappa} + \Phi^{T-t}[\frac{(\alpha - r^{nat})}{(\beta - 1)\kappa} + \kappa^{-1}E_t\pi_T]$$

π_T is arbitrary r.v.

- Here, Φ is defined to be:

$$\Phi = \frac{(1 + \sigma^{-1}\kappa)}{(1 + \beta\sigma^{-1}\kappa)}$$

Active Monetary Policy

- Suppose $\beta > 1$ (active monetary policy).

- Then: $\Phi = \frac{(1+\sigma^{-1}\kappa)}{(1+\beta\sigma^{-1}\kappa)} < 1$ and is *decreasing* in price flexibility κ.

- In any eq'm, if $(T - t)$ is large, $y_t \approx \frac{(r^{nat}-\alpha)}{(\beta-1)\kappa}$.

- Note: (y_t, π_t) are both decreasing in α.

Passive Monetary Policy

- Suppose $\beta < 1$ (passive monetary policy).

- Then: $\Phi = \frac{(1+\sigma^{-1}\kappa)}{(1+\beta\sigma^{-1}\kappa)} > 1$; Φ is *increasing* in κ

- In any eq'm, if $(T - t)$ large, then $y_t \approx \Phi^{T-t}[\frac{(\alpha - r^{nat})}{(\beta-1)\kappa} + \kappa^{-1}E_t\pi_T]$.

- Note: given π_T, set of eq'm (y_t, π_t) is decreasing in α.

Summary

- Under active mon. pol: expectations about LR are irrelevant.

- Under passive mon. pol.: current outcomes depend on expectations about LR.

    − sensitivity nears infinite as prices converge to fully flexible.

- Active or passive: neo-Fisherianism isn't valid.

QUESTION

- Suppose mon. pol. is passive (as near zero lower bound).

- Then: macroeconomy is highly sensitive to beliefs about LR.

  – long-run pessimism translates into bad current outcomes.

- Degree of sensitivity becomes VERY high when prices are highly flexible.

  How can govt use fiscal policy to stabilize economy?