

**Title:** Price flexibility and destabilization in an OLG economy

**Author:** Eisei Ohtaki (Graduate School of Economics, Keio University)

**Abstract:** Among economists, there still exists a widespread confidence that (complete) price flexibility is always stabilizing employment and output when there exists no risk on the real economy. The main aim of this paper is to reexamine this paradigmatic confidence in an overlapping generations framework.

For this aim, we study a solution  $(q^*, L^*) \in \mathbb{R}_{++}^S \times \mathbb{R}_{++}^S$  of the system of equations:

$$(\forall s \in \mathbf{S}) \quad q_s^* u_1'(f(L_s^*) - q_s^*) = \sum_{s' \in \mathbf{S}} \frac{1}{1 + \mu_{ss'}} q_{s'}^* u_2'(q_{s'}^*) \rho_{ss'} \quad (1)$$

and

$$(\forall s \in \mathbf{S}) \quad v'(L_s^*) = f'(L_s^*) u_1'(f(L_s^*) - q_s^*). \quad (2)$$

Primitives of this system are as follows:

- $\mathbf{S}$  is a finite set such that the number of its elements is  $S$ ;
- $\rho = [\rho_{ss'}]_{s, s' \in \mathbf{S}}$  is a Markov transition matrix with  $\rho_{ss'} > 0$  for all  $s, s' \in \mathbf{S}$ ;
- $\mu = [\mu_{ss'}]_{s, s' \in \mathbf{S}}$  is such that  $-1 < \mu_{ss'} < \infty$  for all  $s, s' \in \mathbf{S}$ ;
- $u_i$  for  $i = 1, 2$  is a continuously differentiable, strictly increasing, and strictly concave real-valued function on  $\mathbb{R}_+$  with  $\lim_{x \downarrow 0} u_i'(x) = \infty$ ;
- $v$  is a continuously differentiable, strictly increasing, and strictly convex nonnegative-valued function on  $[0, 1]$  with  $v(0) = 0$  and  $\lim_{x \uparrow 1} v'(x) = \infty$ ; and
- $f$  is a continuously differentiable, strictly increasing, and concave real-valued function on  $\mathbb{R}_+$ ,

In this model,  $\mu$  represents the random growth rate of the money stock. A pair of vectors  $(q^*, L^*)$  satisfying Eqs.(1) and (2) is interpreted as a contingent pair of the real price of money and the employment in a stationary monetary equilibrium of an overlapping generations model with an intratemporal production technology and a Markovian monetary-fiscal policy.

We characterize the necessary and sufficient condition for the nonexistence of a stationary degenerate monetary equilibrium and provide a sufficient condition for the existence of a stationary nondegenerate monetary equilibrium. In a stationary nondegenerate monetary equilibrium, of course, the equilibrium output vector defined by  $y^* = (f(L_s^*))_{s \in \mathbf{S}}$  is also nondegenerate. These indicate that, under a Markovian monetary-fiscal policy, price flexibility does not necessarily stabilize employment and output.

This paper has at least two contributions: The first is to show that price flexibility does not necessarily stabilize employment and output even in an intertemporal general equilibrium setting without any market failures. The second is to show that the monetary-fiscal policy may cause not only inefficiency of allocations but also fluctuation of employment and output even when there exists no risk on the real part of the fundamentals of the economy.

**Keywords:** Price flexibility; Stabilization; Efficiency; Overlapping generations model.