Potential Methods in a Core-Periphery Model with Forward-Looking Expectations

DAISUKE OYAMA
Graduate School of Economics, Hitotsubashi University
oyama@econ.hit-u.ac.jp

Abstract
This paper studies a version of the core-periphery model à la Krugman (1991) where mobile workers are forward-looking. Our dynamic model incorporates frictions as in Matsuyama (1991): opportunities for mobile workers to migrate between regions arrive stochastically, following independent Poisson processes. The key observation in this paper is that, as considered as a game with a continuum of players, the static model (under a certain condition) admits a potential function (Monderer and Shapley (1996), Sandholm (2001)). Appealing to results on perfect foresight dynamics in potential games (Hofbauer and Sorger (1999)), we show that there generically exists a unique state that is globally stable under the perfect foresight dynamics whenever the degree of friction is sufficiently small, and such a state is characterized as a unique maximizer of the potential function. In particular, when the trade barriers are sufficiently low, agglomeration on the region with the highest trade barrier is the unique stable state for a small friction.

Keywords
New economic geography; perfect foresight dynamics; history versus expectations; stability; potential game; turnpike property.

The paper is available at:

References