

Voluntary Participation and Provision of Public Goods in Large Finite Economies

Hideo Konishi* Ryusuke Shinohara†

May 19, 2010

Abstract

How serious is the free-riding problem when agents' participation in contribution to the public goods is voluntary? Is free-riding incentive affected by the number of agents? In a voluntary participation game, agents decide whether to participate in the provision or not. Agents who participate provide a public good and pay the fees according to an allocation rule. Agents who non-participate free-ride on the participants. We examine how the equilibrium public good provision level changes as the economy is replicated in the sense of Milleron (1972). We introduce a continuity concept for an allocation rule, the *uniform continuity in replication* (UCR), which is satisfied by many mechanisms. We show that if an allocation rule satisfies UCR, then the equilibrium level of the public good converges to zero as the economy is replicated.

Keywords. public good provision, participation game, replicated economy.

JEL Classification Numbers. C72, H41.

*Department of Economics, Boston College, 140 Commonwealth Avenue Chestnut Hill, MA 02467, USA. (E-mail) hideo.konishi@bc.edu

†Faculty of Economics, Shinshu University, 3-1-1, Asahi, Matsumoto, Nagano 390-8621, Japan. (E-mail) ryusukes@shinshu-u.ac.jp