

The compactness of $Pr(K)$

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Received: April 4, 2003

Revised: May 20, 2003

JEL classification: C72

Mathematical Subject Classification (2000): 91A10

Summary. We prove the compactness of $Pr(K)$, the set of Borel probability measures on a compactum K endowed with the weak* topology, without embedding this set in $rca(K)$, the space of regular, countably-additive, signed measures with their finite total variation as norm. $Pr(K)$ can be extended to a convex, Hausdorff, linear topological space. Then Glicksberg's fixed point theorem is applied to prove the existence of Nash equilibria.

Key words: Borel probability measures, weak* topology, compactness, payoff functions, reaction correspondences, Nash equilibrium, fixed point theorem.