

Privatization and Social Welfare in an International Mixed Stackelberg Duopoly

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Abstract

Competition between public and private firms exists in a range of industries like telecommunications, electricity, natural gas, airlines industries, as well as services including hospitals, banking and education. Some authors studied mixed oligopolies under Cournot competition (firms move simultaneously) and some others considered Stackelberg models (firms move sequentially). Tomaru [1] analyzed, in a Cournot model, how decision-making upon cost-reducing R&D investment by a domestic public firm is affected by privatization when competing in the domestic market with a foreign firm. He shows that privatization of the domestic public firm lowers productive efficiency and deteriorates domestic social welfare. In this paper, we examine the same question but in a Stackelberg formulation instead of Cournot. The model is a three-stage game. In the first stage, the domestic firm chooses the amount of cost-reducing R&D investment. Then, the firms compete à la Stackelberg. Two cases are considered: (i) The domestic firm is the leader; (ii) The foreign firm is the leader. We show that the results obtained in [1] for Cournot competition are robust in the sense that they are also true when firms move sequentially.

Keywords

Operations research; Game Theory; Stackelberg model; privatization

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Biography

Fernanda A. Ferreira is a Professor in the Department of Mathematics at the School of Management and Industrial Studies of the Polytechnic Institute of Porto, Portugal. She earned B.S. in Mathematics and PhD in Applied Mathematics from University of Porto. She has published journal and conference papers. Fernanda Ferreira is member of the Applied Management Research Unit (UNIAG). Her research interests include industrial organization, and game theory. She is the author or co-author of more than 50 journal papers and conference proceedings. She has given talks in major international conferences, mainly on Mathematics and its applications in Engineering and Economics.

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