

Mixed Duopoly with Vertically Differentiated Services under Price Control: The Case of Japanese Child Care Market

Masuyuki Nishijima*
Yokohama City University

The first version: March 5, 2009 This version: December 25, 2009

Abstract

This paper proposes a theoretical model of how qualities of private and public child care services are determined in Japan to examine effects of "privatization" policy on welfare. The Japanese market of child care service is peculiar in the sense that it is a geographically separated market in which (1) a public center operated by a local government competes with a few private centers, (2) quality matters as vertical differentiation, and (3) price is controlled by the central government. We construct a mixed duopoly model (with vertical differentiation and fixed locations) that reflects these characteristics. We show that quality of private child care is higher (lower) than quality of public child care if and only if the controlled price a private center receives is larger (smaller) than marginal social cost evaluated at socially optimal quality. Furthermore, our simulation result shows that mixed duopoly may be more efficient than private duopoly for a wide range of parameter values even in the relevant case with higher cost of the public center. We also show that in the relevant case with the public center in a leader position, the critical value of cost difference at which mixed duopoly is as efficient as private duopoly uniquely exists and is increasing in the price subsidy. These results suggest that privatization policy does not necessarily improve welfare under the public firm's higher cost when regulation and subsidy remain in imperfectly competitive markets.

Key words: Mixed duopoly, Vertical differentiation, Price control, Child care

JEL Classification Numbers: H44, L33, C72