

Estimating a Dynamic Game of Spatial Competition: The Case of the U.K. Supermarket Industry*

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Abstract

We develop a dynamic model of new store openings and closings with spatial competition and an entry regulator in a continuous-time framework. In the model, opportunities to open a new store or to close an existing store arrive randomly. If a firm receives an opportunity of opening a store in a particular location, it decides whether to send an application for opening a store in that location, taking into account the rivals' future responses as well as the adverse cannibalization effects on own neighboring stores. The regulator either approves or rejects the application, based on the potential effects of the opening on consumer surplus and profits of rival firms. We estimate the model by a two-step method, using data from the U.K. supermarket industry on exact locations and dates of store openings/closings, applications for store opening, and approval decisions by the regulator, together with rich data of consumer choices and consumer locations. In counter-factual analysis, we evaluate the effect of the current planning policy in the U.K and alternative policies.

*Preliminary and incomplete, comments welcome.

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