

## Title: Dynamic Entry with Cross Product Spillovers: An Application to the Generic Drug Industry

### Abstract

Experience in one product market can potentially improve firm performance in a related product market in the future. Thus, entry into a market is determined not just by profits in that market but also by its future impact on profitability in other markets. We formulate and estimate a dynamic model of entry decisions of firms in the presence of such spillovers using data on the generic drug industry.

Spillovers imply that a firm's unobserved "ability" to profit in a product market not only changes stochastically but is also endogenous to past entry decisions. Therefore, the model needs to accommodate unobserved state variables that are endogenous to firm actions and serially correlated. We address the methodological challenge of estimating such a model using a sequential importance sampling based technique.

Our estimates show significant spillover effects of entry on future profits. On average, each entry reduces costs by 7% at the next entry opportunity. On average there are eight entry opportunities annually. The average cumulative benefit of a firm that enters all eight markets in a year is 51%. We conclude that spillovers are critical in the equilibrium evolution of the structure of the generic drug industry.