Entry and pricing with fighting brands: Evidence from the pharmaceutical industry

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Summary: In the pharmaceutical industry, branded drug manufacturers can compete with generics by releasing an Authorized Generic, which is identical to the branded drug but without the brand label attached. This is used to price discriminate between consumers of different preferences, with branded drugs charging high prices and Authorized Generics charging low prices to compete with generics. Such "fighting brand" strategies are common across many industries, and in this paper I analyze such strategies by studying the release, timing and pricing decisions of Authorized Generics (and rival generics) in US. Using drug sales data on US for 2004-2016, I uncover product release and pricing patterns after generic entry begins. I use these to motivate a structural model of drug entry and pricing. First, I estimate a random-coefficients discrete choice demand model to quantify the heterogeneity in brand valuation and price sensitivity among consumers. Next, I estimate a two-stage supply model. In the first stage, generic manufacturers make a static entry decision on whether to enter a molecule-formulation market. In the second stage a dynamic game begins where every period, generics who decided to enter are randomly approved for entry by the FDA and the branded drug manufacturer decides if and when to release an Authorized Generic. The pricing game is modeled as Nash-Bertrand. I estimate the supply side model to back out the entry costs of releasing an Authorized Generic and of generics entering the market. The structural model is then used to conduct counterfactuals exploring factors that affect whether/when an Authorized Generic is released. I change values of brand heterogeneity, speed of brand diffusion, rate of generic entry, price sensitivity, market size, and generic entry costs to see how it affects the timing of Authorized Generic release.[1]

Full version coming soon.

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