Comments on

Beyond Plain Vanilla: Modeling Joint Pricing and Product Assortment Choices

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Introduction

• Empirical model of product assortment selection by firms and the demand of consumers for those products

• Literature

• Replace reduced-form profit function of entry models with structural demand system, combined with endogenous assortment choice

• Use structural model to conduct policy/strategic analysis
  – Bias in demand estimates and product introduction costs
  – Merger analysis: changes in product assortment, prices, and welfare
Basic Model

• Two-stage static game: choose product assortment, then prices

• Firms offer constant set of staples and some set of optional products
  – Stage 1: Choose only set of optional products
  – Stage 2: Set a uniform price for all products (this can be relaxed)

• Some assumptions:
  – Focus on national firms, regional firms do not act strategically
  – No unobserved product attributes
  – Set of feasible product choices is fixed for each firm

• Identification
  – Observe variation in optional products offered across markets
  – Variation in economic variables that produces these outcomes

• Estimate using GMM, moments for product assortment, market shares, and orthogonality condition based on marginal cost shocks
  – Assume incomplete information, compute PBNE
Modeling Comments

1) Endogenous characteristics
   • In real world, firms first choose characteristics and then assortment
   • In model, characteristics are fixed based on observed products
   • Characteristic choice more at firm-level than at market-level?
   • Perhaps characteristic choices are more important for regionals?

2) Role of retailer
   • How much can the retailers influence product assortments?
   • Retailer’s market power might vary by location
   • Different contractual arrangements with different manufacturers
   • Would be nice to control for this with some index (concentration?)

3) Dynamics
   • Entry/Exit vs. On/Off (different cost structures)
   • First time product introduction for a firm vs. for a given market vs. re-introduction to the market
   • Impact on parameter estimates and policy functions
   • Strategic responses by regional players more important?
MC/Data Comments

• Monte Carlo study with 2 firms, 2 products each
  – Merger simulation shows small effect of assortment decision. Why? Maybe offer more intuition on parameter choices
  – Vary degree of product differentiation and costs of introduction, show impact on product lines, prices, and welfare
  – Compare to results from using reduced-form profit function

• Data set on the vanilla ice cream market
  – Ideally want market with variation in characteristics of product line offerings
    • Breyers & Dreyers occupy mid-tier segment, regionals have low+high
  – And where optional products matter more
    • Small market shares for optional flavors – how important are they?
  – Breyers & Dreyers cover 35% of the vanilla market
    • Market size and outside option – how sensitive?
Concluding Remarks

• Solid methodological contribution
  – Structural demand model helps reduce potential bias and aids counterfactuals
  – Expanding MC study would be useful

• Potential for interesting empirical contribution
  – Current data set isn’t perfect (and none are)
  – Perhaps market with more diverse product lines would yield larger difference
    • Estimation by moment inequalities (Pakes, Porter, Ho, & Ishii, 2006) would reduce computational burden, but would not fix potential multiple equilibria problem