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
  - Entry: Bresnahan & Reiss (1991), Mazzeo (2002), Seim (2006)
  - Demand: Berry (1994), BLP (1995), Nevo (2001)

- 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