Rating Score Premium and Seller's Score Management through Dynamic Pricing

Evidence from Taobao.com

Haojun Yu[1]

[1]Department of Economics
University of Southern California

2014.11.20

NEGT Talk at Caltech

Introduction

- Trading platforms (eBay, Amazon) provide feedback mechanism
  - Encourage buyers to rate sellers
  - Ratings are aggregated and displayed to reveal seller / product quality
- Rating score premium: higher chance of transaction and higher price for successful transaction
- General question: how to evaluate the value of the information from peer review?
  - Books (Chevalier and Mayzlin, 2006); Movies (Duan, Gu, Whinston, 2008); Restaurants (Luca, 2012)

Introduction

- **Supply side: Seller's management of rating scores**
- Taobao: rating scores accumulation depends on quality and trade volumes.
- Seller: set lower prices to attract more sales and ratings, and use the high ratings for future profits.
- The incentive to manage rating scores depends on:
  - buyer's willingness to pay for high rating scores;
  - how the speed of accumulation is affected by trading volume.

Model

- Model: single agent dynamic pricing
  - Depending on parameters, non-monotonic relationship of ratings and prices (see figure)
- Extend to competitive sellers and selles of different types (Oblivious Equilibrium)

price - rating scores correlation
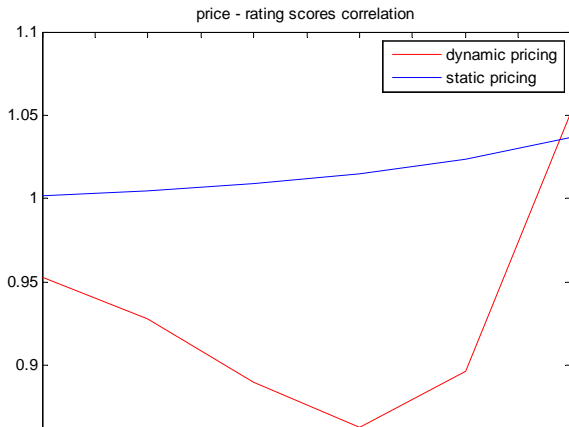
Estimation

- Data: sales of digital cameras
- Nested fixed point algorithm similar to Rust (1987)
  - Inner loop: solve the DP problem for a given parameters;
  - Outer loop: choose parameters to match model predicted prices to observed prices

Prices and predicted prices