Discussion of “Stress Testing a Structural Model of Subscriptions: Robust Inference on Intensive Margin Consumer Demand”

(by Aaron Bodoh-Creed, Brent Hickman, John A. List, Ian Muir, and Gregory Sun)

Discussant: Benjamin Shiller

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Important Topic

- IO: Strong emphasis on discrete choice models, especially logit variety
  - Common even when logically inappropriate (e.g., vertical differentiation)
  - Sensible structure improve would estimates

- This paper: ambitious effort to solve needed problems in demand estimation:
  - When intensive margin of interest (not just discrete choice)
  - Data contains sales only from one of many firms

Fundamental Issues

- Utility specification in paper:

$$U_i(q) = \theta_i u(q) - pq$$

  - Implies “rank stability:”
    - Person i who "likes" product more than person $-i$ will buy more at any price, so long as both individuals offered same unit price.

- Contrast with random coefficient discrete choice:

$$U_i = \delta_i - \alpha_i p_j$$

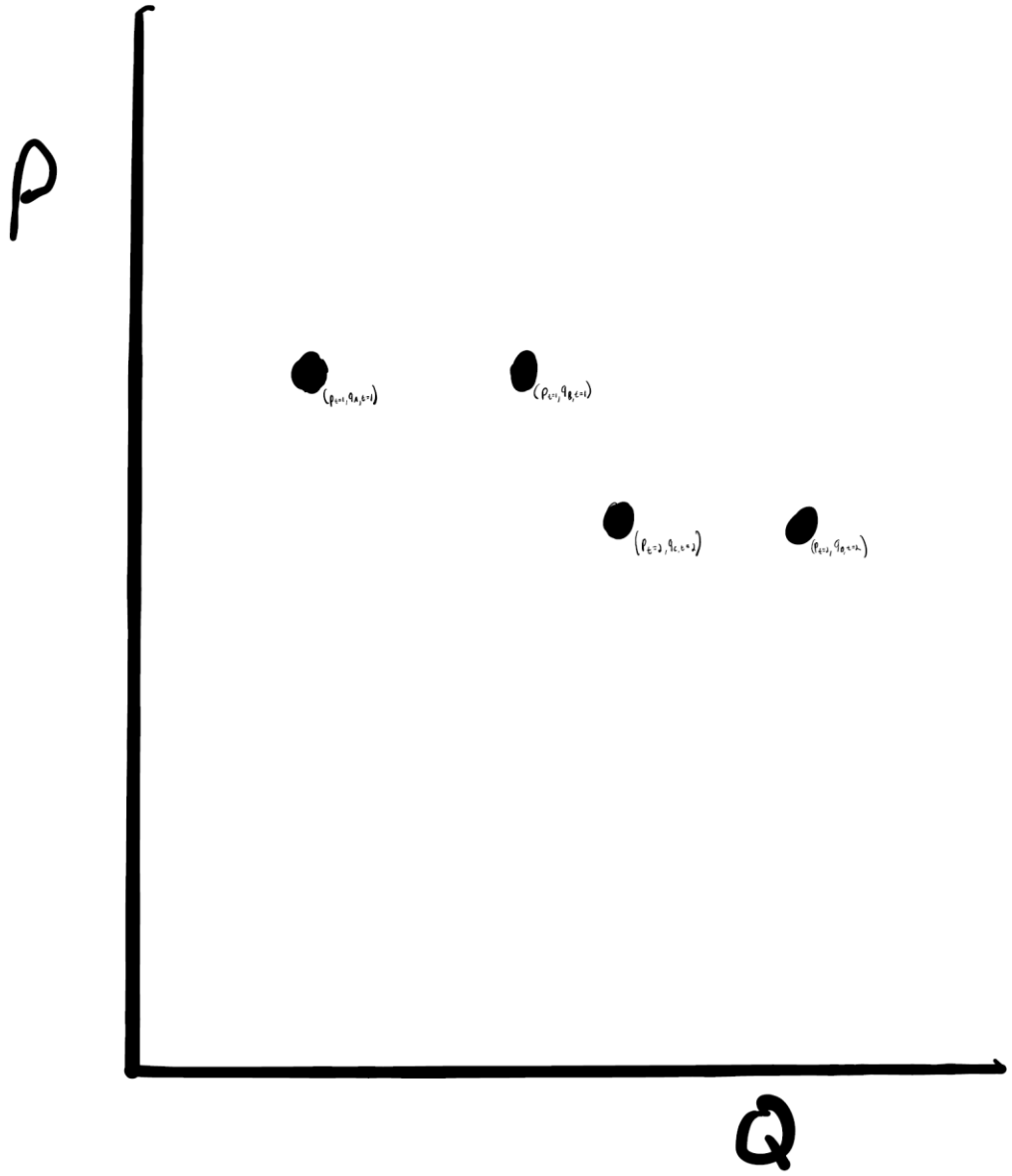
  - Allows individuals to very in both intrinsic utilities and price sensitivities.
    - Rank stability violated, suggesting assumption poor approximation of reality
      - So why use it?
        - Not clear in paper, but attempts to address fundamental issues!

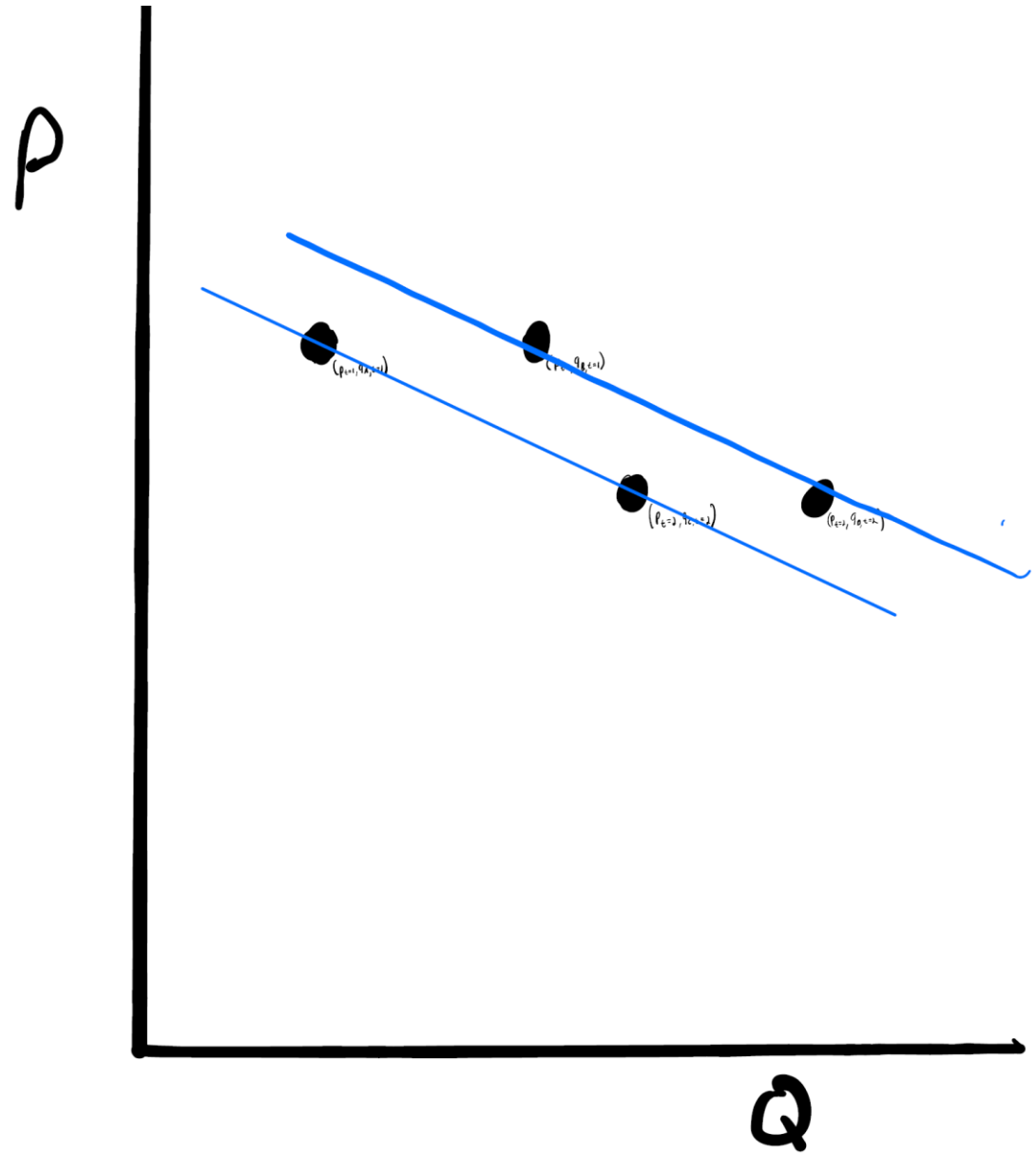
Discussant's take on problem at hand

- If
  - Observe quantity *given* individual buys at two experimental prices
  - And assume stable preferences:
    - Can back out their intrinsic and price sensitivity
      - Solved!

- But, if only observe distribution across consumers of purchase amounts under two price sets…

Not identifi

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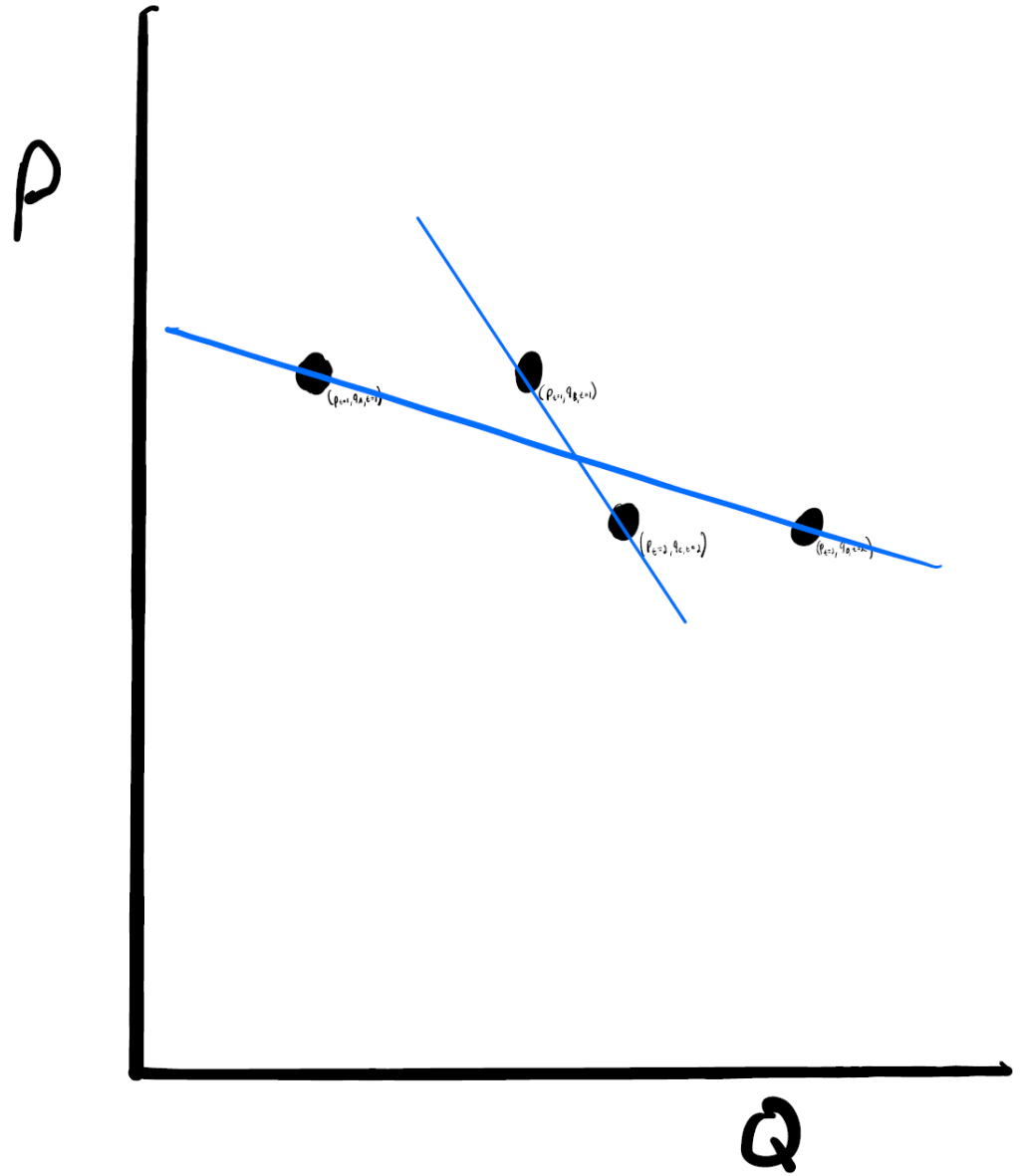
- Cannot distinguish from former scenario

- Rank separability assumption excludes latter case, implying identified



Summarizing

- Need trick to non-parametrically back out demand:
- Authors provides one
- My question:
  - Can one directly compare advantages and weaknesses of:
    - Their method which imposes and then relaxes “rank stability” to get non-parametric demand estimates
    - A parametric empirical model allowing for heterogeneity in *intrinsic utilities* and *price sensitivities*?