Discussion of Arie, Greico and Rachmilevitch, "Generalized Insurer Bargaining"

Bob Town

University of Pennsylvania
The Wharton School
& NBER

Nov 12, 2015

Overview

- A significant development over the 5 years in empirical IO is the estimation of bargaining models in B2B markets
- Building upon the early work of Chipty and Snyder (1999) and Town and Vistnes (2001)
- Crawford and Yurkugolu (2012), Grennan (2013), GNT (2015), Ho and Lee (2015) estimate structural bargaining parameters and then use the model to perform counterfactuals
- Models are important for policy/antitrust enforcement as well as examining fundamental economic questions
- Key assumption: NiN bargaining
- NiN assumption allows for elegant expressions and tractable estimation equations with theoretical justifications (Collard-Wexler, et al., 2015, Horn and Wollinsky, 1988)
- However, ...

NiN Assumptions

- NiN: bargain between k & j solve NB taking as given the NB of the other bargins
- NiN imposes several strong assumptions with strong implications

  - Simultaneous play
  - Equilibrium play under disagreement
  - Informational symmetry
  - Networks are generally taken as given – however could embed network structure determination using approaches in CY (2012) or Ho (2006)
  - As noted by AGR, if payments are per-unit (which is endogenous), surplus can be negative
  - More generally, NiN might not make sense with input complements
    - Ford example – Value of car $=1$, 3 necessary inputs, NiN prediction is price $=.5$

NiN Alternatives

- Finding trackable, alternative bargaining models to NiN is clearly an important research area

- Solutions: k-level rationality model (Stahl and Wilson (1994, 1995) and Nagel (1995)) and Dranove, Satterthwaite and Svekas (2015)

- AGR propose a new, interesting solution to the surplus problem

AGR's modification to NiN

- Proposed Solution: Repeat Sequential Nash Equilibrium
- Idea: change the game leveraging by assuming (quite reasonably) that insurers and hospitals bargain sequentially and leverage the intuition from grim trigger strategy
- All bargaining parameters will generate weakly positive surplus in equilibrium
- Cleaver, elegant, parsimonious and the math is super cool

Identification

- The pricing equation in AGR is:
  $p = (I - \delta\beta(\Psi(\beta) + I))c + \delta\beta\Theta(\beta) - (I - \delta)(\Omega + \Lambda(\beta))^{-1}q$
- GNT: $p = c - (\Omega + \Lambda(\beta))^{-1}q$
- Test the game structure by estimating δ
- Challenging to identify c from β in NiN – this seem very very challenging
    - Two discounts rates?
- Not sure how you separately identify β and δ given the data
- Hypothesis:
    - Need good cost data to identify δ + change in market structure
- Monte Carlo evidence would be helpful here

Comments

- Is this a meaningful problem for the empirics?
    - Maybe, but hard to know. GNT it is not as $\alpha = 0$
    - Of course, estimating the wrong model is problematic but how do we test for the right model?
    - As $\alpha \to 0$ the problem disappears – Ho and Lee estimate a very low α
    - Maybe this explains rise of narrow network plans?
- Is this the best solution to the problem?
    - For example, could we assume fixed side payment that makes all bargains surplus neutral?
- Shapley Values?
- Can reconcile with selective networks?

Final Thoughts

- Very interesting paper with lots of insight
- I love this research agenda and encourage the authors (and others) to continue to work in this area