Berry-Waldfogel "Free Entry and Social Inefficiency in Radio Broadcasting."

Framework: listenership $L^*(N)$ per station (minutes)

- estimable with data
- advertising demand curve $P(L)$
  - price per listener that advertisers will pay.
- welfare = advertiser surplus + station profits − fixed costs
  - $W = \int_0^{NL^*(N)} P(x)dx + N[P(NL^*(N))L^*(N) - F]$

Estimation:

1] $L^*(N)$

- Nested logit model:
  - $u_{ijk} = X_{jk}\beta + \eta_i\sigma + (1-\sigma)\varepsilon_{ijk}$
    - consumer market
    - station
    - consumer taste for radio
    - consumer taste for station k
  - $u_{ij0} = 0$
  - σ indexes the importance of variety.
    - $\sigma = 1 \Rightarrow L^*(N) = L \quad \forall N \geq 1$
    - $\sigma = 0 \Rightarrow L^*(N) \uparrow N$ (logit model.)
- at same time, they get $CS_L(N)$
  - listeners
  - (cannot convert from utils to dollars.)

2] $\text{Log } p_j = X_j\gamma - \eta \log(s_j) + w_j$, $s_j = \frac{\text{Listening}}{\text{population}}$

- homogeneous product for advertisers

3] Fixed costs - impose symmetry

- $\Pi_j(N) = Pop_j \frac{S_j(N)}{N} \cdot P_j(N) - \tilde{F}_j$, $\tilde{F}_j \sim$ lognormal(μ, σ^2)

since $Pop_j \frac{S_j(N)}{N} P_j(N) \geq \tilde{F}_j \geq Pop_j \frac{\hat{S}_j(N+1)}{N+1} \hat{P}_j(N+1)$

- ordered probit

Results:

2509 stations in data

1] Prediction is 649 would be optimal

	Reality	Social Optimum	Monopoly
#stations	2509	649	341
Listener share	12.9%	9.3%	
fixed costs	5.0B	1.1B	

2]
- You need CS_L to be 13.5 cents per hour to make the observed # of stations optimal.
- advertisers get 4.5 cents per hour

Dunne, Roberts, Samuelson "Patterns of firm Entry and Exit in U.S. Manufacturing."

- census of manufacturers (every five years)
- 4 digit level - approximately 450 industries
  - milk, plastic buckets, automobiles
  - approx 300,000 establishments obviously a large category
- (census office in the NBER (can get access as a grad. student - high security environment.)

- Descriptive study of entry/exit.
  - Bottom 280,000 of establishments produce about 15% of output.
  - Dunne, Roberts, and Samuelson drop firms that total 1% of output.

Observations:

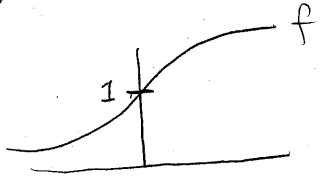
1. Entry rates between census years average 37% of establishments.
   - Entrant share of output is about 15% of output.
2. Exit rates are similar.
3. 60-70% of entrants are new firms, but old firm entry is about 1/2 of entrant output.

- 63-67 entrants: (63 = date of censuses)

	survival	share	size rel to ave. firm
'67	100%	14%	0.35
'72	35%		
'82	12%	5%	1.3

Jovanovic

- Continuum of potential entrants
- Unknown types $\theta \sim N(\theta_0, \sigma_\theta^2)$
- Costs $c(q_{it}) f(\theta_i + \tilde{\varepsilon}_{it})$, $c'' > 0$



  - smaller $\theta_i \Rightarrow$ lower costs
  - $\tilde{\varepsilon}_{it}$ unobservable but costs are observable
- Infinite number of nonatomic firms
  - P_t deterministic
  - Firms are price-takers

- Every period, some firms enter, then all choose q_{it}. Then profits are revealed.

Behavior

- $E_i[\theta_i]$ low $\Rightarrow$ choose q_{it} big
- $E_i[\theta_i]$ moderate or $E_i[\theta_i]$ high but lots of uncertainty $\Rightarrow$ choose small q_{it}
  - to learn θ_i.
- $E_i[\theta_i]$ high and little uncertainty $\Rightarrow$ exit.

Entry and Mobility (in firm profit distribution)

Golder and Tellis, "Pioneer Advantage."

- Contrarians - distinguish pioneers from early leaders.
- 50 products - 53% of early leaders still are leaders.

Bronnenberg, Dhar, Dubé

- Persistence of market shares in mayonnaise in geographic centers for early leaders.

Next time: Midterm

- responsible for all material covered up to today.