Abel: Entry Into Regulated Monopoly Markets: The Development of a Competitive Fringe in the Local Telephone Industry

1. What is paper's contribution?
   How does it push out frontier of knowledge?

   Telecommunications Act of 1996 - removed explicit state and local regulatory barriers to entry that protected incumbent local exchange carriers (ILECs)
   Incentive Regulation - "banded rate of return, earnings sharing, price caps, or complete deregulation" p.291 (???)
   Price Cap regulation - believed to mitigate inefficiencies associated with traditional rate-of-return regulation by providing flexibility and competitive incentives to regulated monopoly firms
   ** "often the industry itself that requested price cap regulation rather than it being forced on them... suggest that the incumbent firms believed they could gain from the adoption of price cap regulation."
   Local access and transport areas (LATA)

   What do we know that we did not know before?

   Other studies used aggregation of several industries... didn't capture characteristics of specific industry behavior (or regulation)
   Tied regulation to "political economy" (public choice)
   Price cap regulation actually makes it less likely to have new entrants and results in larger regulatory staff... opposite of what was believed

   Is this important or minor? Why?

   If true... yes!

2. How did the authors end up with more states in 1996-97 than in 1994?

   Prior to Telecommunications Act of 1996, not all states allowed competitors to enter the market.
   "observations that correspond to states that did not permit competitive entry were omitted from the data set" (p.297)

3. Why are there only 36 states plus the District of Columbia in 1996-1997?

   "Owing to data availability limitations and to make the use of a LATA-level analysis meaningful, observations corresponding to local telephone markets served by regional Bell operating companies (RBOCs) composed the vast majority of the data set" (p.297)
   No RBOC operations in Alaska, Connecticut or Hawaii... used Southern New England Telephone (SNET) for Connecticut; Cincinnati Bell and Rochester Telephone included; other ILECs such as GTE have incomplete or unavailable data... data covers 77% of all local phone customers in US
4. The main regressions in Table 4 are based on 262 observations. What does this sample represent?

- unbalanced panel by LATA taken from:
  - 25 states plus DC in 1994
  - 31 states plus DC in 1995
  - 36 states plus DC in 1996
- Roughly 2 or 3 LATAs per state... linked to metropolitan statistical areas
- Dropped LATAs in rural areas? Would make sense because they may not have entry, but should've addressed it in paper

5. How is entry measured? Would you measure entry differently if the data permitted?

- ENTRY - raw number of new fringe competitors that hold telephone numbers in LATA \( i \) during year \( t \); computed by taking difference between number of CLECs that hold numbers in year \( t \) and year \( t - 1 \)... : measures net entry
- FRSIZE - raw number of fringe competitors (composed of CLECs) that hold telephone numbers in LATA \( i \) during year \( t \)
- Holding numbers doesn't mean you're a competitor (may not actually be serving customers), but other data doesn't exist

6. OLSQ is used to test the empirical model. Would another statistical procedure have been preferred?

- Dependent variable is discrete, plus it's skewed downward (e.g., FRSIZE mean is 2.1, but range from 0 to 16; ENTRY mean is 1.3, but range from 0 to 11)
- "It is common to analyze panel data using either a random-effects or fixed-effects approach" p.304... we haven't covered this in econometrics!

7. What do the LATA fixed effects capture?

- "Inclusion of cross-sectional fixed-effects variables, \( \gamma \), in this estimation will produce asymptotically consistent estimates of the explanatory variables if permanent or highly serially correlated LATA effects, not accounted for by the explanatory variables, are present in the data" p.304
- Local Politics - "agreements are typically negotiated between each new entrant and the ILEC that has operations in a market, but are subject to final approval by the state commission that has jurisdiction" p.302
- Geographic Area - cost of providing service may differ between geographic areas in a way that's not captured in other variables
- May be better to capture firm fixed effects instead of the LATA
- Bottom line... should have economic reason for using a fixed effect
8. Provide an intuitive explanation for the finding that price cap regulations hinder entry.

"keep prices at a level that reduces the fringe's aggregate share of the local market relative to a market share predicted with less stringent regulation" p.299... i.e., prices are lower in price cap market
"alleged inefficiencies brought about by traditional rate-of-return regulation would make incumbent firms under this form of regulation more susceptible to competitive entry" (p.300)

9. Are the data on LATA demographic characteristics based on all the people in the LATA? If not, to what geographic area do the data pertain?

No; based on primary metropolitan area
"information corresponding to the primary metropolitan area within a LATA is the best approximation for that particular LATA" (p.296)
There is data available by county for population and per capita income... would be harder to collect, but possible

10. Does PCREG or POLIT have a greater impact on entry?

PCREG - 1 if price cap regulation
POLIT - ranges continuously from 0 to 1 with scores closer to 1 signaling a Republican bias and closer to 0 signaling a Democratic bias
For commission - give 0 to Dems, 1 to Reps and 0.5 in unknown; add it up and divide by number of commissioners
Poor name... should maybe call it REPUBLICAN (which shows that higher value corresponds to Republican bias)

\[ \beta_{PCREG} = -0.7769 \quad \text{and} \quad \beta_{POLIT} = 3.2466 \ldots \therefore \text{POLIT has greater impact} \]
1 StDev is 0.274 so "typical" effect is 0.274(3.25) = 0.89... interpretation: if POLIT rises by 1 StDev, then expect another 0.89 firms to enter

11.a) Should POP have a positive coefficient? Why?

POP - measure of population
"higher levels of population indicate the presence of more potential customers... the size of a market is an important determinant of the number of firms that operate in that market" (p.301)

b) How great an impact does POP have on entry?

0.01029 per person (average POP is 1.7M)
To get new entrant, "need just under 100,000 people" p.307... don't know how he got this #
StDev is 1.9M so 1.9M(0.01029) = 24,510... doesn't make sense that 1 StDev would lead to 24K entrants... could be that author used different scaling on POP that what's displayed in Table 3

GROW - population growth rate for LATA \(i\) during year \(t\); expect higher growth rates to signify more profitable market... not statistically significant
INC - per capita income for LATA \(i\) during year \(t\); could be derived effect (e.g., more income suggests more businesses which means greater demand for phone lines)
12. The author argues that PROFIT is exogenous. Is this convincing?

**PROFIT** - profit per telephone line for the ILEC servicing each LATA during year t - 1; footnote 18 says that it's actually a state-level measure (not LATA)

"directly measures profitability of a new entrant's most potent competitor" p.300

"many difficulties arise when using profit measures derived from industry accounting records... different accounting practices... single industry in which regulators require each incumbent to report financial activities, the variance in accounting methodology, which still present, is likely to be kept in check" p.300

"while it remains true that any calculated measure of profit does not reflect actual economic profits, there is good reason to believe that the relative differences in profitability across markets are still signaled by these calculations" p.300

"predetermined measures of incumbent profitability are employed to maneuver around this potential statistical problem" p.301

**Note 1**: using firm's total profit divided by # lines or only looking at profits for basic service?

**Note 2**: maybe account for $ spent lobbying since these are monopoly profits spent to prevent entry

13.a) How is WAGE defined?

*average hourly wage paid by the manufacturing sector of the metropolitan area that corresponds to each LATA during year t*

b) Is this a good measure of the cost of labor for a potential entrant?

*not all workers are manufacturing sector (customer service, construction); besides, manufacturing sectors can vary a lot between regions; can use occupation related wages which are estimated by BLS for all metropolitan areas*

**WAGE** - prediction is negative (higher wages imply higher costs so less likely to get new entrants)

Problem - profit should already incorporate wages

**DEN** - population density for LATA during year t; expect positive effect because higher density means lower cost for service... has right sign, but not statistically significant

Problem - using it in linear functional form; would probably be better with exponent < 1 or with natural log

14. What is the hypothesis for ELECT?

**ELECT** - binary variable that takes on the value of 1 if commissioners in state are elected and 0 if appointed

"believe that elected commissioners would act differently than appointed commissioners since they may be more vulnerable to the political process" (p.303)

**H0**: $\beta_{ELECT} \neq 0$

**Note**: What do consumers want: more firms or lower prices?

15. A positive coefficient is predicted for POLIT? Why?

**POLIT** - ranges continuously from 0 to 1 with scores closer to 1 signaling a Republican bias and closer to 0 signaling a Democratic bias

"expect development of a competitive fringe to be positively related with commissions having a Republican bias"... $\Rightarrow$ positive coefficient
16. Are you confident that the regression in Table 7 explains the size of the PUC staff?

Could argue for each of the variables listed would impact PUC staff... each has expected sign too

148 observations... doesn’t say where they come from
Finding... PCREG positively correlated with STFPLN (staff per line)... but no other variables are significant

17. Are there any variables that you would add to or delete from Table 7?

PUC size from previous year?
# companies being regulated
# industries regulated (utilities could include electricity, water, natural gas, etc.)