Oligopoly I

Economics 121
Spring 2006
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Recall Theme 1

- Where a market lies on spectrum from perfect competition to monopoly
- Usually expressed in price terms
- Lerner index
  - 0 in perfect competition
  - 1/e in monopoly
  - where more generally?

More competitors better?

- Lerner index (and deadweight loss, etc.) as function L(N) of number of firms
- Will discuss empirical (statistical) *evidence* about *level* and *shape* of L(N) function
  - L certainly depends on other things too
- First, some theories that *predict* L(N) function
  - Why have theories, not just evidence?
    - Evidence not always clear
    - Clarify expectations of effects of policy

The Cournot Model

- Each firm sets *output* given others' *outputs*
  - Actual and expected: subtle issue
  - What if I surprise them and change my move?
- Why?
  - Capacity choice, with usage cheap
    - Paper, airlines, DRAM

Qualitative Features

- Each firm's residual demand curve has same *slope* as market demand!
  - Unrealistic as metaphor outside capacity case
- But that implies higher *elasticity*
- With N firms, residual elasticity Ne
  - share s implies residual elasticity e/s (s<1)
- Hence markup equation
  - Even though not price-setting
  - Asymmetric case: interpret?

Asymmetric Cournot

- Each firm's Lerner equation
- Share-weighted average gross margin H/e
- Herfindahl index of concentration, H
  - In symmetric case, H=1/N
  - Deal with small firms, asymmetry…
- DOJ/FTC Horizontal Merger Guidelines
  - Lawyer-style H is 10,000 times the size
  - Highly concentrated: 1800
  - Unconcentrated: 1000

Consistent with standard views

- More firms in a market lower price/margin
  - Bigger effects at first
  - Always some effect
- A good handful of firms is sort of enough
  - Deadweight loss proportional to $(H/e)^2$
  - Worry with say 6 or fewer
    - Modern merger policy more laissez-faire than that

Is it right?

- In capacity market with cheap usage
  - Cournot does describe strategy spaces
  - But assumes one-shot behavior
    - One-shot, short markets
    - OK anyway if not too concentrated??
- In price-setting markets
  - Cheap capacity, expensive usage
  - Not realistic descriptively
  - Do predictions sort of work anyway?
- Entry? Market boundaries?

Use of model for empirical

- If Cournot model were right
- And if we tried to test/estimate relationship between just N and L
  - We'd find unconvincing results
  - Reason: it's LNe, not LN, that the model predicts to be constant across industries
- Model tells us what to look at empirically

Reading

- CP chapter 6 through page 170
- Note typo in equation (6.2)
  - Second = should be –
- Why was discussion today so much simpler?

In-class exam on Thursday

- Bring a bluebook
- Closed-book exam
- Calculators OK but shouldn't be needed
- Covers lectures and readings up to now
  - That includes today's lecture, but not the reading just assigned