Chapter 13 – Oligopoly: Firms in Less Competitive Markets
The Four Types of Market Structure

Number of Firms?
- Many firms
- Few firms
- One firm

Type of Products?
- Differentiated products
- Identical products

Monopoly
- Tap water
- Cable TV

Oligopoly
- Tennis balls
- Computer Chips

Monopolistic Competition
- Novels
- Movies

Perfect Competition
- Wheat
- Milk
Example

- Super Bowl Commercials
  - Who are the perennials?
    - Coke
    - Pepsi
  - Could these two be considered under the case of Oligopoly?
  - Why do firms advertise on the Super Bowl?
    - ________
    - ________
    - ________
    - ________
Oligopoly

- **Def**: A market structure in which a small number of *interdependent* firms compete
- “Small number” is often times measure by the *concentration ratio*
  - The fraction of each industry’s sales accounted for by its four largest firms
  - Rule of Thumb – greater than 40% implies an oligopoly.
## Concentration Ratios

<table>
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<tr>
<th>Industry</th>
<th>Four-Firm Concentration Ratio</th>
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<th>Four-Firm Concentration Ratio</th>
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<tbody>
<tr>
<td>Discount Department Stores</td>
<td></td>
<td>Cigarettes</td>
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<tr>
<td>Warehouse Clubs and Supercenters</td>
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<td>Beer</td>
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<tr>
<td>Hobby, Toy, and Game Stores</td>
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<td>Breakfast Cereal</td>
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<td>Athletic Footwear Stores</td>
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<td>College Bookstores</td>
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<td>Radio, Television, and Other Electronic Stores</td>
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<td>Computers</td>
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<tr>
<td>Pharmacies and Drugstores</td>
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<td>Dog and Cat Food</td>
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Oligopoly

- What is it that keeps other firms out of the market?

- **ANS:**
  - Anything that keeps new firms from entering an industry in which firms are earning profits.

- This is our new assumption for this market structure.
Barriers to Entry

1. Economies of Scale
2. Ownership of a key Input
3. Government Imposed Barriers
Economies of Scale

- Recall: What are economies of scale?
  - ___________________________
  - ___________________________

- How in the world can economies of scale be a barrier to entry? How can they prohibit firms from entering?

- If economies of scale are important, then large
Economies of Scale

• Demand represents how much consumers want
• If LRAC2 represents costs, how many firms producing Q2 will it take to satisfy demand?
  • __________
• If LRAC1 represents costs, how many firms producing at Q1 would it take to satisfy demand?
  • __________
• If LRAC2 represents reality for, say car manufacturers, what is going to happen to the small auto firm?
  • __________________________
  • __________________________
• Which do you think is more representative for restaurants?
• Which do you think is more representative for automakers?
• Live Goggle
Barrier to Entry – Ownership of a Key input

- How would you like to own all the coal mines in the United States?
  - What might that do for your business?

- ALCOA
- De Beers
- Ocean Spray
Barrier to Entry – Government Imposed Restrictions

- **Patent**
  - The exclusive right to a product for a period of 20 years from the date invented

- **Occupational Licensing**
  - Doctors, Dentists

- **Example**
  - Less Restrictive Bankruptcy laws of the 1990s caused personal bankruptcy cases to go up.
  - $750 if done by lawyer
  - $270 if done by paralegal.
  - Section 110 of the Bankruptcy Reform Act gives judges the power to set the fee that paralegals can charge

- Government granted barrier to entry
**Patents**

- Should we keep patents around or should we get rid of them?
- What is the tension of opposites here?
- [Link](#)
How firms interact

- **Key insight** into Oligopoly
  - Because there are only a few firms, each firm’s actions depends on the action of other firms.
  - Firms act ___________________________
  - Notice how this is different from perfect competition.

- **Example** of Strategic Interaction

- We analyze these interactions using
Game Theory

- Firms Interact
  - One Firm’s Decisions affects the other firm
- Use Game Theory to Analyze these types of decisions
  - Def:
    - The study of how people make decisions in situations in which attaining their goals depends on the interactions with others
    - Study of firms where the profit of each firm depends on its interaction with other firms
Characteristics of Games

All games share three key characteristics:

1. **Rules** that determine what actions are allowable
2. **Strategies** are all actions that players employ to attain their objectives in the game
3. **Payoffs** that are the results of the interaction among the players’ strategies

**Business strategy** Actions taken by a firm to achieve a goal, such as maximizing profits.
An Example: Coke vs. Pepsi Ads

- **Rules:** Simultaneously choose how much to advertise.
- **Strategies:** Increase advertising or don’t.
- **Payoffs:** The profits you get from choosing whether to advertise.

### Payoffs:
- **Firm 1:**
  - Increase: $10 mil.
  - Don’t Increase: $8 mil.
- **Firm 2:**
  - Increase: $17 mil.
  - Don’t Increase: $15 mil.

### Example Scenario:
- **Firm 1:**
  - Increase: $15 mil.
  - Don’t Increase: $8 mil.
- **Firm 2:**
  - Increase: $15 mil.
  - Don’t Increase: $17 mil.
A Troublesome Outcome

Firm 1: $10 mil.
Firm 2: $10 mil.
Firm 1: $17 mil.
Firm 2: $8 mil.
Firm 1: $15 mil.
Firm 2: $15 mil.
Firm 1: $8 mil.
Firm 2: $17 mil.
A Troublesome Outcome

Firm 1: $10 mil.
Firm 2: $10 mil.

Firm 1: $17 mil.
Firm 2: $8 mil.

Firm 1: $15 mil.
Firm 2: $15 mil.

Firm 1: $8 mil.
Firm 2: $17 mil.

Don't Increase

Increase

Firm 1

Firm 2
A Troublesome Outcome

Firm 1: $10 mil.
Firm 2: $10 mil.
Don't Increase

Firm 1: $17 mil.
Firm 2: $8 mil.
Don't Increase

Firm 1: $15 mil.
Firm 2: $15 mil.
Increase

Firm 1: $8 mil.
Firm 2: $17 mil.
Increase

Increase

Don't Increase
What will firms do in this Case?

- Find the equilibrium
- Find an equilibrium using dominant strategies
  - Def: A strategy that is best for a firm no matter what strategies other firms use.
  - AKA Nash Equilibrium
- How to do it: Hold constant one firm’s strategy, then see what is best for the other firm. Repeat for all strategies and all firms.

The Equilibrium is where both stars appear.
Each firm is acting in its best interest no matter what the other firm does.
Cultural Examples of Game Theory

- John Nash
  - A Beautiful Mind *(2001)*
- Mutually Assured Destruction (MAD)
- Ebay
  - What is your best bidding strategy?
    - What is your best bidding strategy *independent* of what other people do?
Competitive Forces

1. Competition from Existing Firms
   - Amazon vs. Barnes and Noble vs. Buy.com

2. Threat From Potential Entrants
   - Thinks of the Apps store
   - Think of Starbucks and Entrants into Premium Coffee market

3. Competition from Substitutes
   - Electronic vs. Hard cover encyclopedias
   - Electronic pay vs Electronic free

4. Bargaining Power of Buyers
   - If you only have one buyer, you will most likely be forced to sell at a lower price
   - Automobiles and Tires

5. Bargaining Power of Suppliers
   - Generalized input – lots of competition (napkins), suppliers cannot extract from you your profits. (e.g. Napkin Suppliers cannot compete away profits from McDonalds because napkins are too general of an input
   - Specific Input, less competition – Operating Systems