Chapter 13: Monopolistic Competition and Oligopoly.

I. Monopolistic competition.
   A. many firms
   B. product differentiation
   C. few barriers to entry
   D. independent decision-making by firms.

II. Oligopoly
   A. few firms: small enough that there is interdependent decision making.
   B. homogeneous or differentiated products.

III. Measuring concentration.
   A. four firm concentration ratio: sales of top 4/(sales in industry)
   B. Herfindahl-Hirschman Index: sum of squared market shares.
      1. \(0 < HHI \leq 10,000\)
   C. DOJ formed merger guidelines in early 1980s.
      1. if post-merger HHI<1000==>industry competitive==>merger allowed.
      2. if 1000<HHI<1800==>merger scrutinized (gray area).
      3. if HHI>1800==> merger likely to be challenged (red zone).
   D. Difficulties in using concentration measures as indicators of competition.
      1. geographical scope of market
         i. examples: airlines, grocery stores, newspapers.
      2. barriers to entry
         i. may have very concentrated industry, but entry may be easy (e.g. local restaurants, used car dealers).
      3. market versus industry: many firms produce multiple products. merger of firms could make some markets highly concentrated and others could remain competitive
         i. example: AMC/Chrysler merger.

E. Market structure in the U.S. economy.
   1. Based on total sales, about 75 percent competitive or monopolistic competition
2. about 20 percent oligopolistic
3. about 5% monopolistic.

**IV. Profit maximizing behavior in monopolistic competition.**

**A. Short run: choose output where MR=MC.**

1. graphic representation.
2. show how profits are calculated.

**B. Long run.**

1. positive profits attract new entrants, shift demand left until profits=0. negative profits cause exits, shift demand right until profits=0.
2. graphic representation.
   i. excess capacity: output is less than the amount that minimizes ATC.
   ii. there is a deadweight loss because less than the efficient level of output is produced.
3. while there is a deadweight loss and excess capacity, there are some advantages of monopolistic competition relative to perfect competition.
   i. variety
   ii. incentive to innovate with new products.
4. Some potential disadvantages of monopolistic competition.
   i. needless differentiation (e.g. ibubrofen vs. tylenol)
   ii. considerable advertising expense .. does the advertising serve a useful purpose (e.g. coke vs. pepsi ads; Budweiser ads, etc.)

**V. Oligopoly.**

**A. skip kinked demand curve, dominant firm oligopoly.**

**B. Game theory.**

1. used to examine strategic interactions between players.
2. can be applied to oligopolistic behavior.

**C. The Prisonner’s dilemma.**

1. John and Mary have been caught stealing an auto. DA has sufficient evidence to convict.
2. DA has suspicion that John and Mary are also guilty of robbing a convenience store.. but can’t convict without one of the parties turning state’s witness.
**D. Nash equilibrium: is there a strategy that dominates for each strategy that the other player chooses?**

1. John: if Mary denies, best option is to confess. If Mary confesses, best option is to confess. Same is true for Mary.

2. Nash equilibrium: both confess.

**E. Similarity between game theory and oligopoly behavior.**

1. suppose have two firms in an industry and they behave as a single monopoly. if the two firms jointly act as a monopoly, they will produce where MR for the industry = MC for the industry.
   
   i. assume the firms agree to split the market in half, with each producing the same amount.

   ii. the amount produced determines the market price.

2. at the “cooperative” agreement, each firm is faced with MR>MC since if they increase production on their own (and other firm doesn’t) price won’t fall as much as if both increase production.

3. consequence of one firm cheating is that:

   i. firm that cheats has increase in their profits (MR>MC)

   ii. firm that doesn’t cheat has decrease in their profits since price falls and they are producing the same amount as before.

4. graphic representation

   i. the industry versus the firm.

   ii. the collusive agreement: where MR=MC.

   iii. incentive to cheat: MR for firm is above MR for industry.

   a. each firm wants to increase production since MR for firm is above MC for firm at monopoly outcome.

   b. if one firm cheats and others don’t: cheater’s profits rise; compliant firm’s profits fall.

5. example: collusion in OPEC; Agricultural co-op agreements, bid-rigging.

6. Similarity to prisoner’s dilemma.

   i. pay-off matrix.
<table>
<thead>
<tr>
<th>Firm B</th>
<th>Comply</th>
<th>Cheat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comply</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: +100</td>
<td>B: +100</td>
<td>A: +150</td>
</tr>
<tr>
<td>Cheat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: -50</td>
<td>B: +150</td>
<td>A: 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B: 0</td>
</tr>
</tbody>
</table>

ii. Can change strategies to compliance on:
   a. price (high, low)
   b. advertising
   c. market boundaries.

VI. Likelihood of collusion and DOJ anti-trust policy.

A. When HHI is in questionable area, other factors are considered.
   1. barriers to entry: when there is collusion, profits are positive: new entrants will be attracted.
      i. potential entry can deter firm’s from raising price (“contestable markets”)
         a. ex. airline industry.
   2. how easy is it for firm’s to observe each other’s behavior?
      i. easier monitoring makes enforcement easier (price lists advertised or are deals “one-on-one”?)
   3. is the game “repeated”?
      i. if firm’s have an opportunity to “penalize” cheaters in a repeated game, collusion is more likely.

VII. Government Regulation, Anti-Trust Laws (most of this material is from ch 19)

A. theories of regulation.
   1. public interest: political process generates regulations designed to achieve “socially efficient” outcome.
   2. capture theory: regulations are designed to satisfy the demand of producers to maximize producer surplus.
      i. regulations benefit producers (concentrated group) at expense to consumers (disperse group).

B. Types of regulation.
   1. natural monopoly.
      i. marginal cost pricing (discussed earlier)
a. generates socially efficient level of output.
b. if single price: economic loss
c. can offset economic loss with
   1) price discrimination
   2) two-part pricing.
   
   ii. average cost pricing (“fair return” regulation)

iii. problems with regulating natural monopoly:
   a. what’s fair rate of return?
      1) who bears risk of firm (Zimmer power plant was a flop..who pays for mistake? shareholders or customers?)
   b. does firm have incentive to inflate costs (high salaries, luxury offices, etc.)

2. oligopoly regulation.
   i. public interest theory: regulations may be used to reduce consequences of collusion, keep prices low, improve “efficiency” of the industry (public interest theory)
   ii. capture theory: regulations may be used to protect firms from competition, actually enforce cartel agreements.
   iii. regulations may be an attempt to serve public interest, but may stifle efficiency and drive up costs.
   iv. evidence:
      a. airlines: after deregulation, prices fell and volume increased.
         1) consumer surplus increased $11.8 billion
         2) producer surplus increased $4.9 billion.
         3) rapid change in structure of airline industry (hubs, excess capacity reduced, pricing changes, etc.)
      b. trucking: after deregulation
         1) consumer surplus increased $15.4 billion
         2) producer surplus decreased $4.8 billion.
         3) truck driver’s wages fell.
      c. other industries that have been deregulated.
         1) natural gas
         2) long distance telephone
         3) cable
         4) proposed deregulation
            i) electric
            ii) local telephone

C. Anti-trust policy.

1. The Standard Oil Story: John D. Rockefeller owned standard oil. He was able to extract discounts from the railroads for shipping his oil and drawbacks for shipments made by rival oil
firms. During the 1870s, Standard Oil increased its capacity from 10 to 90 percent of the U.S. total. In 1882, the independent members of standard oil contributed shares to a central trust, allowing a central body to manage all firms. The central body shut down some refineries, restricted production, and drove up oil prices.

2. 1890: Sherman Act
   i. passed partly in response to the monopolization of the oil industry.
   ii. Law prohibited “combination, trust, or conspiracy to restrict interstate or international trade”.
   iii. Sherman Act used in 1911 to break up Standard Oil (created Exxon, Sohio, Chevron, etc.)

3. 1914: Clayton Act.
   i. prohibited
      a. interlocking directorates
      b. tying contracts

4. 1914: Federal Trade Commission Act
   i. created FTC to prosecute “unfair competition”
   ii. outlawed misleading advertising.

5. 1936: Robinson-Patman Act (Chain store law)
   i. made “quantity discounts” illegal
   ii. prevented stores from selling to public at “unreasonably low” prices.

6. 1937: Miller-Tydings Act
   i. allowed Resale Price Maintenance if state approved.
   ii. arguments against RPM (cartel enforcement from upstream provider)
   iii. argument for RPM (necessary to protect high quality service)
      a. McTravel
      b. Apple computer