Monopolistic Competition

- **Characteristics:**
  - Large number of sellers
    - Small market share
    - No “collusion” – which means?
      - Producer’s act independently
  - Differentiated products based on different:
    - Product attributes
    - Customer service
    - Location
    - Brand names and/or packaging
  - Producers have some control over price
Monopolistic Competition

- Characteristics (cont.)
  - Easy entry and exit for sellers
  - Sellers must advertise/market
    - = “NON-PRICE” competition
Monopolistic Competition

- How do we determine which market is “monopolistically competitive?”
- We must measure the *degree of concentration* of the market.
  - Four-firm concentration ratio
    - Output of four largest firms in the market DIVIDED BY the total output of the industry
    - If this ratio is low = more competitive market
    - If this ratio is high = less competitive market
    - A monopolistically competitive market will have a relatively low ratio
    - An oligopoly will have a relatively high ratio
Monopolistic Competition

- Degrees of concentration (cont.)
  - Herfindahl Index
    - Sum of the squared percentage of market shares of all the firms in the industry
      - i.e. $(\% \ MS \ of \ firm \ 1)^2 + (\% \ MS \ of \ firm \ 2)^2 + (\% \ MS \ of \ firm \ 3)^2 + \ etc$
    - A perfectly competitive industry would have a Herfindahl index approaching zero
    - A monopoly would have a Herfindahl index approaching $10,000$ ($100^2$)
    - The lower the “HI” the greater is the likelihood that the industry is monopolistically competitive
    - The higher the “HI” the greater is the likelihood that the industry is an oligopoly
Herfindahl Index

HI of different industries:

- Jewelry = 117
- Retail bakeries = 7
- Quick printing (e.g. Kinkos) = 319
- Women’s dresses = 84
Monopolistic Competition

- The firm’s demand curve is highly elastic
- Profit maximization occurs where $\text{MR} = \text{MC}$
  - In the short run, a monopolistically competitive firm can earn ECONOMIC PROFITS (or losses)
  - In the long run, a monopolistically competitive firm will only earn NORMAL PROFITS
    - Due to the ease of entry and exit of firms in the market
- Monopolistically competitive firms/industries are not efficient (productively or allocatively)
- Greater product variety than perfect competition, oligopoly and monopoly
Monopolistic Competition

Short-Run Profits

Price and Costs

Economic Profit

Quantity

0

P_1

A_1

Q_1

D_1

MC

ATC

MR = MC

MR

11-8
Monopolistic Competition

Short-Run Losses

Price and Costs

Quantity

Loss

\( A_2 \)

\( P_2 \)

\( Q_2 \)

\( D_2 \)

\( ATC \)

\( MC \)

\( MR \)

\( MR = MC \)
Monopolistic Competition

Long-Run Equilibrium

\[ MR = MC \]

\[ P_3 = A_3 \]

\[ Q_3 \]
Monopolistic Competition

\[ P = MC = \text{Min ATC} \text{ for pure competition (recall)} \]

Price is Lower

Excess Capacity at Minimum ATC

Monopolistic competition is not efficient
Examples of Monopolistically Competitive Firms

- McDonald's
- Macy's
- Ford
- Samsung
Oligopoly

- Characteristics
  - A few large producers
  - Products can be:
    - Homogenous – which means?
    - Differentiated
  - Firms have some control over price ("price makers") but based on:
    - Mutual interdependence  AND
    - Strategic behavior
Oligopoly

- Characteristics (cont.)
  - Barriers to entry – firms cannot easily enter the market
  - Sometimes formed due to mergers (“industry consolidation”)

- Mutual Interdependence and Strategic Behavior
  - Mutual interdependence = firms base their production/marketing/price strategies on the actions of other firms
  - Strategic behavior = self-interested behavior that takes into account the reactions of others
Game Theory

- 2 competitors
- 2 price strategies
- Each strategy has a payoff matrix
- Greatest combined profit
- Independent actions stimulate a response

<table>
<thead>
<tr>
<th></th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$12</td>
<td>$15</td>
</tr>
<tr>
<td>B</td>
<td>$6</td>
<td>$8</td>
</tr>
<tr>
<td>C</td>
<td>$15</td>
<td>$8</td>
</tr>
<tr>
<td>D</td>
<td>$6</td>
<td>$8</td>
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</tbody>
</table>

- RareAir’s Price Strategy
- Uptown’s Price Strategy
• Independently lowered prices in expectation of greater profit leads to the worst combined outcome
• Eventually low outcomes make firms return to higher prices
Game Theory

- Mutual Interdependence plays a part in game theory
  - Decisions based on the competitions actions
- Collusion
  - Cooperation with rivals
  - If collusion occurs, the oligopoly forms a pseudo-monopoly
  - Incentives to cheat
    - EX: OPEC and oil production
3 Types of Oligopolies

- The Kinked-Demand Curve
- Collusive Pricing
- Price Leadership
Due to Mutual Interdependence, a firm can take two possible actions:

- Match the price changes of a competitor
  - Results in a more inelastic demand curve and steeper MR curve
    - Price changes result in smaller changes in quantity demanded
- Ignore the price changes of a competitor
  - Results in a more elastic demand curve and less steep MR curve
    - Changes in demand will depend on the direction of the price change
Kinked-Demand Curve

Competitor and rivals strategize versus each other. Consumers effectively have 2 partial demand curves and each part has its own marginal revenue part.

Resulting in a kinked-demand curve to the consumer – price and output are optimized at the kink.
What is a cartel?

An agreement to:

- Set the price of a product
- Establish outputs of individual firms/countries
- Divide the market geographically
Cartels and Other Collusion

- Covert collusion = a tacit understanding to not lower or raise prices/production
- Overt collusion = a formal and public understanding to cooperate on price or production
  - EX: OPEC
- What can be an obstacle to collusion?
  - Demand and cost differences of firms
  - Number of firms
  - Cheating
  - Recessions reduce incentive to cooperate
  - Entry of new firms
  - Anti-trust laws
## Daily oil production (barrels), November 2008

<table>
<thead>
<tr>
<th>Country</th>
<th>Daily Production (barrels)</th>
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<tbody>
<tr>
<td>Saudi Arabia</td>
<td>8,904,000</td>
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<tr>
<td>Iran</td>
<td>3,843,000</td>
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<tr>
<td>Kuwait</td>
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<td>Venezuela</td>
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<tr>
<td>Indonesia</td>
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<tr>
<td>Ecuador</td>
<td>530,000</td>
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</tbody>
</table>

Source: A. T. Kearney, *Foreign Policy*
Price Leadership Model

- Implicit understanding to coordinate prices or production
  - A dominate firm makes price/production changes
  - All other firms follow this leader
- Leadership tactics include:
  - Infrequent price changes
  - Communicating impending price changes
  - Limiting the % change in price to prevent other firms from entering the market
Oligopoly and...

- **Advertising**
  - Prevalent in both monopolistic competition and oligopoly
  - Used to capture market share
    - More effective than a price cut in some instances
  - Provides information to consumers
    - Consumers make informed choices
  - Manipulates consumer taste and preferences
Oligopoly and...

- Efficiency
  - Oligopolies are not:
    - Productively efficient
    - Allocatively efficient

- Profit
  - Oligopolies tend to share in “monopoly” profit
    - What does that mean/

- Government
  - Oligopolies are not regulated as are monopolies
  - Still subject to most anti-trust laws