CHAPTER 14

Oligopoly

<Review Slides>
What you will learn in this chapter:

- The meaning of **oligopoly**, and why it occurs
- **Collusion**
- **Game theory**, especially the concept of the prisoners’ dilemma
- **Tacit collusion**
- **Antitrust policy**
Oligopoly

Oligopoly is a common market structure. It arises from the same forces that lead to monopoly, except in weaker form. It is an industry with only a small number of producers. A producer in such an industry is known as an oligopolist.

When no one firm has a monopoly, but producers nonetheless realize that they can affect market prices, an industry is characterized by imperfect competition.
Understanding Oligopoly

One possibility is that the two companies will engage in **collusion**—Sellers engage in **collusion** when they cooperate to raise each others’ profits.

The strongest form of collusion is a **cartel**, an agreement by several producers that increases their combined profits by telling each one how much to produce.

They may also engage in **non-cooperative behavior**, ignoring the effects of their actions on each others’ profits.
Firms may decide to engage in:

- *quantity competition* (the *Cournot* model),
  or
- *price competition* (the *Bertrand* model)
Game Theory

When the decisions of two or more firms significantly affect each others’ profits, they are in a situation of interdependence.

The study of behavior in situations of interdependence is known as game theory.
## A Payoff Matrix

<table>
<thead>
<tr>
<th></th>
<th>Produce 30 million pounds</th>
<th>Produce 40 million pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ajinomoto</strong></td>
<td>Ajinomoto makes $180 million profit.</td>
<td>Ajinomoto makes $200 million profit.</td>
</tr>
<tr>
<td><strong>ADM</strong></td>
<td>ADM makes $180 million profit.</td>
<td>ADM makes $150 million profit.</td>
</tr>
<tr>
<td><strong>Produce 30 million pounds</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Produce 40 million pounds</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Prisoners’ Dilemma

Thelma

Don’t confess

Louise

Confess

Don’t confess

Louise gets 5-year sentence.

Thelma gets 5-year sentence.

Confess

Louise gets 2-year sentence.

Thelma gets 20-year sentence.

Louise gets 20-year sentence.

Thelma gets 15-year sentence.

Louise gets 15-year sentence.

Thelma gets 15-year sentence.
## How Repeated Interaction Can Support Collusion

<table>
<thead>
<tr>
<th></th>
<th>Tit for tat</th>
<th>Always cheat</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADM</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tit for tat</td>
<td>Ajinomoto makes $180 million profit each year.</td>
<td>ADM makes $150 million profit 1st year, $160 million each later year.</td>
</tr>
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<td>Always cheat</td>
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</table>

- **ADM** makes $200 million profit 1st year, $160 million each later year.
- **Ajinomoto** makes $160 million profit each year.
The Kinked Demand Curve

1. Any marginal cost in this region ...

2. ...corresponds to this level of output.

Tacit collusion outcome
The Ups and Downs of the Oil Cartel

Crude Oil Prices, 1947–2003 (in constant 2000 dollars)

- Iran–Iraq War
- OPEC 10% quota increase
- Series of OPEC cuts 5 million barrels
- Yom Kippur War
- Arab oil embargo
- Gulf War
- 9/11
CHAPTER 15
Monopolistic Competition and Product Differentiation

<Review Slides>

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What you will learn in this chapter:

- The meaning of **monopolistic competition**
- Why oligopolists and monopolistically competitive firms differentiate their products
- How prices and profits are determined in monopolistic competition in the short run and the long run
- Why monopolistic competition poses a trade-off between lower prices and greater product diversity
- The economic significance of advertising and brand names
The Meaning of Monopolistic Competition

Monopolistic competition is a market structure in which

- there are many competing producers in an industry,
- each producer sells a differentiated product, and
- there is free entry into and exit from the industry in the long run.
Product Differentiation

There are three important forms of product differentiation:

- **Differentiation by style or type** – Sedans vs. SUV’s

- **Differentiation by location** – Dry cleaner near home vs. Cheaper dry-cleaner far away

- **Differentiation by quality** – Ordinary ($) vs. gourmet chocolate ($$$)
The Monopolistically Competitive Firm in the Short Run
Entry and Exit into the Industry Shift the Demand Curve of Each Firm

(a) Effects of Entry
- Entry shifts the firm’s demand curve and its marginal revenue curve leftward.

(b) Effects of Exit
- Exit shifts the firm’s demand curve and its marginal revenue curve rightward.
The Long-Run Zero-Profit Equilibrium

Price, costs, marginal revenue

\[ P_{MC} = ATC_{MC} \]

Point of tangency

\[ Q_{MC} \]

\[ D_{MC} \]

\[ MC \]

\[ ATC \]

Quantity
Monopolistic Competition versus Perfect Competition

In the long-run equilibrium of a monopolistically competitive industry, there are many firms, all earning zero profit.

Price exceeds marginal cost so some mutually beneficial *trades are exploited*.

The following figure compares the long-run equilibrium of a typical firm in a perfectly competitive industry with that of a typical firm in a monopolistically competitive industry.
Comparing Long-Run Equilibrium in Perfect Competition and Monopolistic Competition

(a) Long-Run Equilibrium in Perfect Competition

(b) Long-Run Equilibrium in Monopolistic Competition

Minimum-cost output
Controversies about Product Differentiation

No discussion of product differentiation is complete without spending at least a bit of time on the two related issues—and puzzles—of:

- advertising
- brand names