Duopoly

Definition

- A duopoly is a firm whose profits depend on the behavior of one – and only one – other firm.
Oligopolies

• A duopoly is a firm whose profits depends on the behavior of one – and only one – other firm.
• An oligopoly is a firm whose profits depends on the behavior of a few firms.

Duopolies vs. Oligopolies

• A duopoly is a firm whose profits depends on the behavior of one – and only one – other firm.
• An oligopoly is a firm whose profits depends on the behavior of a few firms.
• All duopolies are oligopolies, but all oligopolies are not duopolies.

Why Duopolies

• A duopoly is a firm whose profits depends on the behavior of one – and only one – other firm.
• An oligopoly is a firm whose profits depends on the behavior of a few firms.
• All duopolies are oligopolies, but all oligopolies are not duopolies.

Defining an Oligopoly

• Often defined by four firm concentration ratio.
  What percent of total sales come from the four largest firms?

Defining an Oligopoly

• Often defined by four firm concentration ratio.
  We use another definition:
  – When other firms affect demand.

The Cooperative Solution

• Two firms make up an industry.
  – How should they set price and output?
The Cooperative Solution

- Two firms make up an industry.
  - How should they set price and output?
- One option is to cooperate, work like a monopoly and split monopoly profits

An Illustration

\[ Q = 100 - 2P \]
\[ MC = \$5 \]

- In a Competitive Industry, \( P = \$5; Q = 90 \)
- In a Monopoly, \( P = \$27.50; Q = 45 \)

The Problem

- Cartels are both illegal and difficult to maintain

An Illustration

\[ Q = 100 - 2P \]
\[ MC = \$5 \]

- In a Competitive Industry, \( P = \$5; Q = 90 \)
- In a Monopoly, \( P = \$27.50; Q = 45 \)

Why not cooperate? Let each produce 22.5 and sell at $27.50
The Problem

- Cartels are both illegal and difficult to maintain
- The Solution is to develop models of how firms behave when they cannot explicitly cooperate.

Modeling Duopoly

- The Cournot Model
- Nash Equilibrium
- The Bertrand Model

©2003 Charles W. Upton